

*Lyonsell, Tollemache*

A  
**TREATISE**

OF THE

*Small-pox and Measles ;*

DESCRIBING

**Their Nature, Causes, and Signs,**  
*Diagnostick and Prognostick,* in a  
Different Way to what hath hitherto been  
known.

TOGETHER,

**With the Method of Curing**  
the said Distempers, and All, or  
Most, of the Best Remedies.

A L S O,

**A Particular Discourse of Opium, Dia-**  
*codium,* and other Sleeping *Medicines ;*  
with a Reference to a very Great Case.

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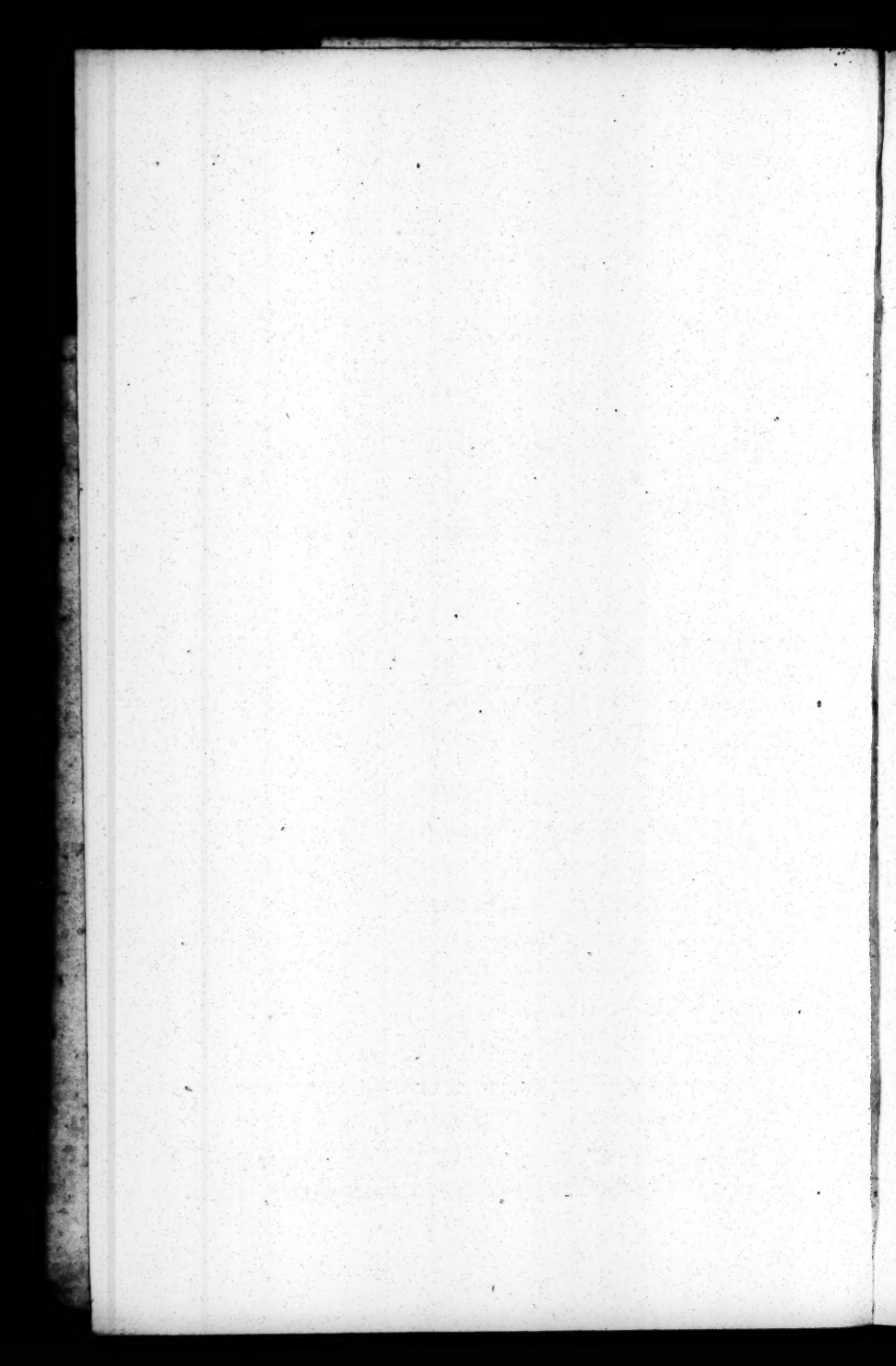
By *Gideon Harvey, M.D.*

**HIS MAJESTIES** *Physician of the Tower*  
And not of the **COLLEGE of Physicians.**

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L O N D O N,

Printed for *W. Freeman,* at the Bible over against  
the *Middle Temple-Gate, in Fleet-Street,* 1696.





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# THE Preface.

**U**PON thought, that the Small Pox and Measles are here-  
in Discours'd in their True Causes, altogether different from those hitherto Received among the Gang of Physicians; though very Erroneously, and contrary to all Reason: That the Manner of their Generation, from their First Source, their Separation and Expulsion are so evidently and plainly set forth: That their Diagnostick and Prognostick Signs are so Copiously and Distinctly here described: And lastly, that their Cure

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and Management are exactly explained in the proposal of the Methods, Remedies, and the best of Medicines, wherein you are so guided, as to make Choice out of their several sorts, and to apply them to their Various Kinds and Seasons of those Distempers: I say, upon thought of these particulars, ( which are all adapted to ordinary Capacities, if with a studious care read over ) that 'tis scarce possible for any of Sense to believe, that I can have any other design, than the preservation of your Life, and the Informing you to secure your self against such Advices, whereby frequently Men, Women and Children have been most certainly slaughter'd; I mean, against the Ignorance, Covetousness, and Opiniatreness of such, who profess themselves to be list-ed in the Regulated Band of Physickers. By the Reading the Contents of these few Pages, you may easily put your self into a qualification of Judging of the Procedure and Advice of Physicians given to the greatest of Persons,

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*Persons, in all Spiritual Graces and Moral Vertues, not to be parallel'd; on which subject, if you desire the Opinion and Character of others, I must refer you to that excellent Poem of the most Ingenious Golden Poet.*

*The Design of this Tract, and the doubtful Reflexions it might cause, did occasion some to exercise their industry to delay the Pr---g of it, by a bait that took very easily with the P-er, or else this would have come out Two Months, or Ten Weeks ago; and now it's carelessly finisht, a Barrier is put by the same Parties, to the Common Ten Shilling-Way of Publishing Books, so that the Publisher is not to be prevail'd with to give it Room among his Advertisements of Puppy-dogs lost, and Geldings Stol'n or Stray'd.*

*If I tell you, that here are set down Rules to Ascertain the Seasons, Number, and Proportions of Bleedings, to the true and necessary Occasions, and Diseases,*

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*Diseases that require 'em (which no Physick-Author hitherto hath done yet) whereby the Vulgar-Road of Bleeding at Random, according to the Capricious Phansie of the Physickers, at any time, and almost in all Diseases, to the Fatal Injury of so many Thousands, may easily be shun'd; Moreover, if I advert you, that the Nature of Opium, and all other Sleeping-Medicines, of which the World hath been to this day Grossly Ignorant, is here so manifestly detected, that their Pernicious Effects may be avoided; and their Usefulness Employed in such Cures, where this will Instruct you, may be Requisite: And if I may, without Ostentation, let you know, that possibly out of these few Sheets may be Extracted more True and Practicall Notions in Physick, than by many years turning over of Voluminous Idle Books in Medicine; all this is Premis'd to no other end, than to Caress you to the Reading of this Small Treatise.*

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*One Advantage I shall easily obtain;  
That the Small Pox and Measles be-  
ing Distempers, wherein the Female-  
Vulgar, in Knowledge and Experience,  
are on a Level with the Reputedly-best  
of Physicians; I shall now readily  
acquire your Assent, that as they are  
plainly Ignorant and Fatal in these Di-  
seases, it's not im-probable they are so  
in many, if not most others; which is  
sufficiently detected in the latter part  
of the New Edition of The Art  
of Curing Diseases by Expectation,  
the greater part whereof is wholly new,  
and hath been endeavour'd to be Sti-  
fled with all the Industry imagina-  
ble.*

*To Conclude this Proeme, I shall only  
observe, that in some places, Physicians  
are generally extreamly bold in their Pra-  
ctice (setting aside, that Gross Igno-  
rance is the Mother of Boldness and  
Confidence) proceeding from this Barba-  
rous*

## The Preface.

rous Apprehension in them, That if they do not Cure a Patient Speedily, any other Physician may be called in upon them, and they turn'd out; for which Reason they will most boldly strain the most Dangerous Remedy they have, choosing rather, that the Patient should Die under their hands, than with caution and longer time, be Cured by another of more Honesty and Integrity. But if perhaps you call in another, who proves to be a Man of the same Physic-Conscience with the first; he, to gain Reputation over the other that's left off, shall immediately strain his Remedies to the highest Excess; fearing either that the Patient may return to the First Physician, or a Third call'd in upon him.

Thus I have several times known a Second Physician call'd in to the Small Pox, that by Bleedings hath in a very little time given his Patient the Lift; the like I have known



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*known hath happen'd frequently by Violent Purges in other Distempers, by the Second and Third Physician; particularly in Consumptions, Phthysicks, Dropfies and Fevers.*

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TREATISE  
OF THE  
Small-Pox  
AND  
MEASLES.

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CHAP. I.

*Comprising some Objections made by  
Nurses and Motherly Women,  
against Physicians, in the Small-  
pox, and Measles.*

I. IT is no slight Reflection the  
World makes, that Motherly  
Women, Nurses and Mid-  
wives, by their petty inspection of  
Diseases of their Family, and of those  
B whom

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whom they neighbourly go to visit, do attain to so distinguishing a knowledge in the Measles, Small-pox, Red-gum, Rash, Blasts, spotted, viz. Red and Purple Fevers, that they very frequently hitting right, doth embolden them in point of judgment, to demand a priority of a whole herd of Doctors; ridiculing their fourteen years Studies with their Reading of Play-books and Romances, and Idle Chattering in their Halls and Schools for seven years of that time, spending four or five years or more in Drunkenness, and other Debaucheries, and devoting the last year to a Candle-light reading of some musty Physick Author, and then they are singly to be saluted by the name of *Domine Doctor doctissime & expertissime*; whence this so boldly censuring World seems to infer, That a Jovial debauch'd Conversation is the usual and infallible Expedient, the infant or growing Physician makes use of to list a Legion of Acquain-

quaintance ; whose Fame, at the expiration of his Academic Apprenti-ship, they shall not only noise, but by a strange sort of Credulity, (as if a consummated Learning and Experience must necessarily attend any debauch'd University Physician, that is of a man's Acquaintance) subject their Bodies to all the Experimental Tortures, his Capricious Indiscretion and Ignorance are pleased to inflict.

2. This popular Reflection so rashly made, and universally applicable, seems to me to pretend, to cloath all, or a whole Pannel at least of Physicians ( though originally cried up by the Populace themselves, and now cried down, who therefore may well be stiled the *Mobile*) with so much cloudiness, and darkness, as if they were not able to see, what sort of Pimple is the Measles, what the Small-pox, what Red-gum, or what Complexion a St. *Antony's* Fire, and *Erysipelas* are of, pronouncing the same Distemper and Eruption, one  
B 2 day

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day the Measles, another day an *Erysipelas*, a *St. Antony's Fire*, a Rash, (in which case, possibly, a Doctor declares his Patient as well in health as himself, and out of all danger) the third day the Small-pox, the fourth a Spotted Fever, and the fifth day the Purples, with their sentence of Death annex.

3. The prophane Vulgar being so audacious, as to attack the whole *Apollinean Race*, are embark'd in a Design no less defamatory than malicious, by forming, without any Logick, a natural conclusion from the Premises, *viz.* Are Doctors, through want of Experience, such Strangers to the countenances of so dangerous Eruptions, as the Small-pox, and Measles, and a Rash, (though aboding no danger) which our less-knowing Sex is seldom mistaken in, then the Remedies that are applied, must prove most certainly fatal, if what ought to be directed for the Small-pox, is design'd  
against

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against the Rash, or simple Fever, or what is prescribed against a Rash, or simple Fever, ought to respect the Small-pox, and a putrid Fever, both which, how benign soever, by misapplications may be turn'd to the most malignant, and consequently mortal Distempers.

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CHAP.

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C H A P. II.

*Reports the general Opinion of the  
Original of the Small-Pox and  
Measles.*

I. **B**Eginning from the original, source, or root of those Epidemical Eruptions, though uncommon to the pedantic Method, and *Chicaneries* of the Schools, will more readily conduct you to the growth and branches of them, and consequently your observation following the tract, shall at length discover the Expullulations and Buds they will terminate into, whether Measles, Small-pox, or what else.

2. If you will give credit to Tradition, then for some Centenaries of years this following Opinion is handed to us, and almost *Nemine contradicente*, universally received; That there is a *Labes*, or taint and impurity inherent in the Maternal Blood, that



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that gives nutrition and augmentation to the parts of the *Fœtus*, or Child in the Womb; of which impurity, Nature, at some uncertain time after the Birth, doth discharge and purify all the Parts and Juices of the Body, by throwing it out into Measles or Small-pox.

3. From this Text may be drawn several Doctrines.

1. That there is an original *labes* in all Maternal Blood. I hope, they will not assert, That this original *labes* is synonymous to original Sin, that is, As there is an original *labes* in the Soul, supposed to be *ex traduce*; so there must also be an original *labes* in the Body.

2. That all Mankind must, at one time or other, undergo that Purgatory of the Measles and Small pox; or Measles only, or only Small-pox.

3. That the Small-pox or Measles must be one of the first, and conse-

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quently one of the most Ancient Diseases of Lost Paradise.

4. That the Measles and Small-pox are inevitable and hereditary Diseases.

4. The first of these Doctrines seems to be establish'd upon the Opinion of the Ancient *Arabian* Physicians, who observing the promiscuous converse of their Women with Men, fell into a notion, That their Wombs must necessarily attract thence a great fowlness, which most certainly they did; and therefore now and then their spurious Issue was surpris'd at some time or other with Blotches, crusty Pimples, Ulcers, and pains of Limbs, they bestowing the names of *Bothor* and *Pua* on that sort of Distemper, which to me appears rather a Distemper of the Great Pox, than the Small. Moreover, though in those days some of the rougher Regions of *Arabia* might in some wise be Coadjutants to that fowl

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fowl Disease, yet in others of a more temperate Air, its appearance is not recorded by any credible Hand; neither was it so universal in any part of their Climat, but the greater number escaped that sort of taint, throughout all the stages of their life, contrary to what Modern Physicians figure to themselves, imposing a necessity on all Mankind of undergoing once in their life-time the Measles and Small-pox, which is most notoriously false; many retiring out of this world, both Old and Young, that never underwent the sense of either of those Distempers. In conclusion, The *Arabian* Pox may with greater right deserve the Epithete of Universal in these days among the Debauchees, than any other. That the Measles and Small-pox is derived from a stain, taint, or any impurity impressed from the foulness of the menstruous Blood on the fluid, or solid parts of the Infant, is scarce possible, if you will

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but grant, that all tainted or malignant Particles are ever in motion, as it will be proved to you below; for in thirty, forty, or fourscore years (before which time some have not the Small-pox) the motion of those Particles must be intirely spent and vanisht.

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CHAP.

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C H A P. III.

*Containing Arguments, proving, That the Measles and Small-Pox are not caused by any impurity in the uterin Blood.*

I. **N**ature having in all other particulars shewed the greatest providence for Humane Kind, that in this of its production she should be so defective, is very strange; since the Fruit of Vegetables is engendred out of their most pure and exquisitely defecated Sap, whose purity is so much the more exalted, by as much as the Fruit in all sensible and insensible Qualities, excels all the parts of the Plant, and is preserved with the greatest defences of coverings; strong ones without, to resist all external Injuries; and fine tender soft ones within, to prevent any hurt it might receive from them; all which is  
very

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very evident in great and small Nuts, and many other Fruits, as if Nature design'd to put her last hand to the perfecting of them. If you apply your Observation to the Fruits of Animals, which as they stand in a degree higher in the Works of Nature, derive their production from Juices refined to a much higher exaltation ; for instance of which, we need look no further than an Egg, whose Yolk can so little be thought to be affected with the least taint or impurity, that rather, in the judgment of all, it's held to be of the purest and sweetest Juice, and most carefully walled up in a fine Shell. Can it then be thought by any Rational, besides *Arabians*, and such as are included in the same Category of Sense, that Man, the highest Work of Nature, should receive his first nutrition and augmentation from a polluted Maternal Blood? To me it is beyond all doubt, That the nutrition of the *Fœtus*, or  
Infant



Infant in the Womb, is from the purest, and most refined extract of the Maternal mass, through the branches of the Hypogastrick, and some of the branches of the Spermatick Arteries, terminating in the *fundus uteri*, or upper part of the Womb, which being thickest, and very closely cemented in the inside, with a fine and very glutinous and tenacious *mucus*, nothing of Blood can be thought to distill monthly from thence; but from the lower part, near the *Os internum*, and from the *Cervix*, out of branches of the Spermatick Artery, in which parts there being many large spongy Pores, the Blood doth oft stagnate, and thence oft-times grows impure, acid, putrid, and somewhat foetid. Moreover, it is not beyond suspicion, that there may be a communication with the internal hemorrhoidal Vessels, which are frequently found to transport very impure and foetid Blood. That these menstruous vessels are implanted near



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near the *Os internum uteri*, and some without the *Os*, in the *collum*, appears plainly in some Women that have their ordinaries the whole course of their pregnancy, or Child-bearing. Wherefore it cannot rationally be supposed, that Man being the noblest of the Creation, being so carefully wrapt within two such thick Vellum (if I may so say) Inclosures or Coats, and in a part so close, thick and strong, as the Womb, where nothing can be apprehended to pass of impurity through all those Cases, should derive his first Constitution from impure, variolous, menstruous, and recrementitious Blood; but it must be granted, that out of the purest, and most refined Blood, the parts are nourish'd; unless you do conceive, that Nature hath been more bountiful in her providence, in the production of the Fruit of Vegetables, and all other Animals, whose Young, as Chickens, Pigs, Lambs, and others, consist of a Flesh abundantly

dantly more sweet and delicate, than of Hens, Swine, and Sheep, and consequently engendred out of the purest Blood, and Juices of the Old ones.

2. To illustrate this matter further, it's very observable, That the care and prospection of Nature in the propagation of Mankind is so extraordinary, that where the Mother hath been sufficiently poxt, yet the Blood that's transmitted for the nutrition of the *Fœtus*, is so depurated, that she hath brought forth a strong and sound Infant, living to a great Age.

3. Many Women that never had the Measles or Small-pox in their Lives, have brought into the world sound Children, which notwithstanding have been taken two or three years after with the Small-pox: Now can it be imagined, that a Mother can impart an Impurity to her Conception, which she never was tainted with her self?

4. Since

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4. Since it cannot be supposed, without Injury to the Female Sex of the Northern Climes, that they only are subject to this Taint and Infection, but that Women all the world over must be imbued with the same pollution, (which leads me to the second Doctrine) it must follow, that all Men, Women and Children must be smutted once, or oftner in their life-time, with this variolous Distemper; the contrary whereof is evidenced by a considerable number of Men and Women, that have escaped both Measles and Small-pox, though attaining to their Sixtieth, Seventieth, or Eightieth year. The Reply, That had they lived longer, they would have undergone those Diseases, might be as well applicable to such as had reacht an even term with *Old Parr*, and therefore doth not merit an Answer; though I will not deny, but all are, or have been imbued with those impure, contagious *Effluvia* after their Birth,

Birth, that have a power to produce the Small-pox or Measles : But on the other hand I do also assert, That in those that lived to a great Age, and never lay under those Distempers, Nature had either thrown them off insensibly through the pores, or by some eruptions, blotches or pimples, too slight to be taken notice of by those that were affected with them, or being accompanied with causes of other Distempers, have been expelled together. However it's agreeable with universal experience, that three fourths of those Northern Regions do once or oftner in their life-time pass that sort of purification, many once, some twice, and some very few three times.

In the more Southern hot Climates, as most parts of *Asia*, *Africa*, and South *America*, the Measles and Small-pox are so rare, that few know what they are, or what Names to give them, and fewer that ever  
were

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were sensible of those Diseases.

5. It's most certain, that neither *Hippocrates* or *Galen* were acquainted with any Names that denoted the Measles or Small-pox, unless you will restrain the word *ἐξανθήματα* to them, which generally expressing efflorescencies and eruptions, and being by them no where applied to Symptoms, that accompany those impure Distempers, can in no wise be intended for that signification: some Authors do accept it in, but only for all sort of heats, pimples, red, purple, or black spots in malignant and pestilential Fevers; tho' some will have it, that pimples only were by them named *ἐκδήματα*, and all sort of malign spots *ἐξανθήματα*, *vid.* Hipp. *de morb. pop.* & Gal. *de morb. epid.* As for the words of *pustulæ* or pimples, and *papulæ*, signifying Red Gum, neither of them being particularly applicable to Measles or Small-pox, it's a great sign they knew nothing of the matter.

6. It's

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6. It's very remarkable, that tho' those Southern people are not subject to undergo those Distempers of the Measles and Small-pox in their own Country, yet no sooner they arrive in these Northern Regions, or soon after, but are commonly surprized with one or other of them, or both successively, at some uncertain Interval, one after another. And what is more astonishing, the Dogs and Pigs that are brought over hither from *Guiny*, undergo the same Distempers. Moreover, the Swine here have been frequently observed to have Measles, and also Small-pox; and the like may be taken notice of in Dogs and Chickens.



C H A P. IV.

*That the Measles and Small-Pox are not the first and most ancient of Diseases, neither are they inevitable and hereditary.*

I. **T**Hat those foul Distempers were to be accounted among the first and most ancient of Diseases, ( as the third Doctrine doth imply ) must necessarily be inferred from the foulness of the uterin blood, which our first feminine Parent, or She-protoplast must have engendred, to transmit it to her descendants, and consequently must be inevitable and hereditary, according to what is expressed in the fourth Doctrine. But then here ariseth another Question, Whence did our first Parent derive her Foulness? In answer to which, and the preceding matter, Holy Writ not making the least mention of these Distempers  
either



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either in the Books of *Moses*, or that  
of *Job*, renders it ridiculous to ima-  
gine them to be of that priority, or  
antiquity, or inevitable and here-  
ditary, which must suppose those  
impure *semina fermentativa*, as our  
great Author terms them, to be  
transmitted from the mother to the  
*fætus*; but granting the mother was  
clear of the supposed impurity, or  
at least was freed from it, by having  
undergone the Measles and Small-  
pox before her Conception, then she  
could not (as hath been hinted be-  
fore) have infected the *fætus*, which  
must be, if you will make those Di-  
stempers hereditary; for *nihil dare  
potest quod non habet*, except the  
Pope.

## C H A P.

C H A P. V.

*Proving the Original of the Small-pox and Measles to be in the Air ; and the explaining the manner of falling into those Diseases.*

I. **S**INCE then it appears, that the *Fætus* receiveth its Nourishment and Growth from the purest Blood, and from the most refined Air, strained through the most subtle Pores of all the membranous coverings it's wrapt up in, and through the Pores of those thick walls of the *Uterus*, within all which it's cherisht with a most temperate warmth of the Mother ; when afterwards it happens to launch out from its little World into the great, it must necessarily encounter with a Cold (in respect from whence it came) sharp, and rough Air, pricking it round in all its external and internal most tender, and sensible parts, like Needles,  
and

and Darts (no wonder it cries upon its first arrival) I say it's prick't and annoyed by the Air, filled with insensible corpuscles or particles of all manner of Composition, Constitution or Mixture, and of all sorts of Figures; some crooked, contorted or skew'd; others straight, globular; some sharp-pointed; others blunt; some are benign in quality and effects, others more or less Malign, many of those Particles are Saline, others Sulphurous; as they are all various in mixture and figure, so in their Motions, and Positions. Those immediately upon its Birth crowd through the Pores of its tender soft Skin, and other Ambient membranes into all its Juices, and the most retired parts of its Body, so that inevitably its Humours, and all its Parts must be rendred very rough, extreamly alter'd by being disturbed in their Positions, Motions, and Figures; and most certainly here it is, it admits the *Semina* of several impurities

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purities, which soon after break out in red Gum, a running at the Ears and Arm-pits, and sometimes into the Measles or Small-pox (though rarely) into the Thrush, and many others, according to the Powers and Qualifications, the admitted foreign Particles are indued with : So that all the impurity an Infant brings with it, is only a little black Matter in the Gut of the Fundament, a little slime about the Mouth, Nose, and Ears, except what its stained with in the passage in coming forth.

2. On the other hand were the Infant to be nourisht with such pure Juices, and benign Air in the great World, as it was in the little, where from the bigness of a Nutmeg, in less than nine Months it attains to the dimension of a Peck, it might according to that proportion of time grow in a few years to the bigness of an Elephant, did not the Determination of Nature put a stop to its growth.

3. To

3. To my self I establish this following as a Rule, by which I do not only desume my Indcations successfully, but can also give my self a Solution to many Queries touching the Measles, Small-pox, and indeed all other contagious Diseases, and without which I can give my self in those particulars no manner of Satisfaction, *viz.*

The Air in all places inhabitable is always filled with all manner of Particles; namely, such as I have mentioned in the foregoing first Paragraph, though in some places, and at some times more with one kind than another; but this wants some probable Proof, and a further Illustration: Suppose a piece of ground Eight or ten Foot in Dimension; in digging hereof you may possibly discover either Gravel-stones, Marl, Clay, Iron-stones, Brimstone, or what else; these do all consist of sensible parts: you cannot imagine but of each, some of their insensible Parti-

C

cles

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cles are always steaming into the Air, which must make a strange Variety ; or suppose a small piece of uncultivated Ground, where you commonly may discover hundreds of different sorts of Vegetables, it may be Wolfsband, Henbane, Time, Savory, Ashen-trees, &c. each of these must emit different Particles into the Air, and likewise you must apprehend, they spring up out of different Juices of the Earth, which makes it possible, that every handful of Earth may differ from each other; the same may be thought of the water, that gives its Original to thousand sorts of Plants, and to innumerable little Animals (discernable by the Microscope) and to great ones, as Frogs, Leeches, Water-Snakes, great and small Fish, &c. all which do likewise emit steams into the Air; so that each Pailful of water, for what I know, may differ from another; the like Variety may be instanced in the Fire ; also a vast proportion of steams must



must be communicated to the Air from all sort of Cattle, Vermin, little Animals engendred out of Putrefaction; in fine, every animate and inanimate Body upon the Surface of Earth doth exhale Clouds of particles into the Air, which Particles are always in Motion. Such a vast density of Millions of variety of Particles, must by Action and Reaction, by the Rays of the Sun, and other Motions from above, cause a Change every moment in the Activity, Force, Motion, Position and figure of Particles, whereby they become sometimes benign, sometimes more or less malign, at one time ready to cause a malign Fever, at another the Small-pox, at another a pestilential Fever. These Particles being most in motion, and agitated Spring and Fall by the Rays of the Sun, are a Cause, why at those Seasons contagious Distempers, and other Diseases also are most frequent.

4. The Small-pox and Measles, are either Sporadick, or Epidemick ; the former is when Persons at any time are scatteringly, that is, here and there surprized with either of these Diseases ; which wherever they happen to seize many Persons in the same Country, about the same Seasons, and Times, become Epidemick, as they have proved lately for several Months.

5. How some happen Sporadickly to fall into the Small-pox, many others Epidemically, I apprehend in the manner you will read after I have premised, that it's only such I mean as never had the Small-pox, or had them imperfectly, it may be but once, and that not many, and not those that have had them thoroughly either at once, or twice, who are no longer subject to the Small-pox. The manner will be best explain'd by an Instance of one in perfect Health, who never passed thro' this Distemper ; coming out of the  
Country,

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Country, or from his Habitation elsewhere, to some House or Street, meets with a Cloud of variolous Particles; these environing of him, enter the Pores of his Skin, and by Inspiration his Lungs; the Person returns home, falls ill, and has the Small-pox in such wise, as you will read hereafter. Had this Patient escaped that Street, or House, or any other, where such variolous Clouds do float, in all probability he would have defer'd catching this Distemper. Tho' the variolous, \* or half pestilential Particles are more frequently floating in or about Cities, and Towns, it's not very rare to meet with them in scattered Villages, arising out of Church-Yards, standing Pools, stinking Ditches, or Morasses, and places where Garbage, Carrion, and other Nastiness is thrown, so that it's sometimes equally possible to fall into that Disease in the Country, as in

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\* I do here take those Particles, that cause the Small Pox, to be half Pestilential.

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Cities, or Towns. Secondly, There must be a Disposition in the Person, that may be infected, who never had that sort of Contagion, or else it's possible enough for one to escape both a sporadic and epidemic Small-pox, that hath thorowly had them before. A proper disposition requires,

*First*, Fulness of Humors, whose Pores the insufficiency of Spirits being incapable of filling, are the readier enter'd and possest by the half pestiferous Particles.

*2dly*, Fitness of the Figures of the Pores, to receive the Figures of the said Particles.

*3dly*, Feebleness and poverty of the Spirits; laxity of the ambient Membranes and Humors, besides several other Concurrents.

5. Many are precipitated into an Epidemic Small-Pox, because as in the Sporadic, only small clouds or parcels of demipestiferous Particles are dispersed here and there throughout a whole Country, Town, or City only,

only, or may be transported from one place to another by one, that is lately recovered of them, through particles still evaporating through his pores out of his body, or inhering in his cloaths; so in an Epidemic Pox, those clouds are more thickly and to a greater extension spread over the whole tract of Air, which consequently many that are predisposed must inspire.

6. Here a Question proper enough may be moved, *viz.* all inspiring the same Air in an Epidemic Season, Why should not those, that have undergone the Small-pox thorowly, relapse into the same Contagion with those that never have been under it? After my way this is easily answer'd; The suffering of that Distemper, I look upon as a seasoning to the demipestiferous Air; for as a new earthen Pot is seasoned, by letting the particles of the Fire gradually enter its pores, whereby they are by little and little widened, and then the Fire

C 4      entering

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entring with a full force, and finding no straitness or resistance, passeth through without any injury to the Pot; whereas should it at first be committed to a vigorous Fire, it would soon be crackt by the fiery particles forcing the pores asunder, and this is called a Seasoning. So in like manner the demipestiferous particles having formerly shaped the figures of the pores of those, that have thorowly been afflicted with the Small-pox, and finding free egress and regress, do not, or cannot fasten on their humors, or parts. From what is premised, it must necessarily follow, that an Epidemic Small-pox doth in many degrees exceed a Sporadic Pox in danger, the Air being in the former much more, and that universally loaded with demipestiferous particles, and such as are more acute or sharp pointed than the other. And in good truth most other Distempers, as putrid Fevers, Consumptions, Pleurisies, and other Inflammations



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inflammations, internal of the Bowels, and external, whether of the glands, or other parts, are observed to receive such an intension and peijoration by those forementioned particles, that they very frequently prove malign ; as for instance, common swellings of the glandules about the neck, and under the arm pits, do most of 'em at those Seasons turn to the Kings-Evil, Coughs, to a Consumption, &c.

8. It is very remarkable, that those Distempers, whose original is usually attributed to taking or catching of cold, which doth not always terminate into Coughs or Hoarsnesses, but into any other Distemper, which the particles of the Air do determine it to, according to the figure and other accidental predispositions of the external membranes, and internal parts, which the said various particles floating in the Air find adapted to give them entrance, especially at the reigning of any Epidemic Di-

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stemper; for where Diseases are only Sporadic, the malign particles of the Air are much qualified by the intermixture, action or motion of other various particles.

9. Therefore the several sorts of Air ought not to be chiefly distinguished by grossness, thinness or clearness, but by the greater proportion of such or such particles it's endued with, as will appear by this following instance: The Mariners and Super-cargo's of the Ships of *Europe*, that trade on the Coast of *Guiney*, lying on Board, feel themselves well, but passing a night or two's sleep on shore, are commonly seized with a malign Fever, that oft proves mortal. No doubt but Air in point of clearness or thinness, doth not much differ in a quarter of a League, or if it doth, it's probable to be clearer a shore, and notwithstanding it's much more insalubrious.

C H A P. VI.

*Of Contagion, and contagious Diseases,  
of which the Small-Pox is a species.*

I. **T**O make the marks of the abovementioned *Phænomenon* (which I may rather term a truth) to bear, it will be very necessary to premise a short Interlocution concerning *Contagious Diseases*, which are all occasioned by external adventitious particles, (*effluvia*, or *miasmata*) transmitted out of the ambient Air immediately, or mediately from other infectious Bodies.

2. These contagious particles being admitted through the pores, and by inspiration of the lungs into the Bodies of Animals, do in some few instantly, in most others after a greater or lesser interval of time, exert their powers, as is manifest in those that are infected with the  
*French*

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*French Pox*, whose *effluvia* or steams do in some operate soon after their admission, as appear by the starting up of venereal Symptoms in two, three, four, or more hours, even in others a moment after ; but in many after a week, a month, three, four, five, or six months ; a year, two, three, or four years ; and in some old Bodies many years after.

3. It is universally observed, that many have received a pestilential Infection, which hath shewed its malignity in some instantly, in others some few hours, weeks, or months after ; and this particularly is remarkt, that some having received into their Bodies pestilential particles at *Constantinople*, did arrive many months after in *Italy*, where the said particles had put their malign powers into action, in that manner, that not only the transporter hath fallen into the Plague, but likewise hath infected other Bodies, who have so filled

filled the Air with pestiferous Miasms, that the whole Country hath soon after fallen into the Plague ; whence it is *Italian* Princes are so careful, that they will not suffer any person coming from those *Levant* parts, to travel through their Country, or remain there, without having performed his *quarantine*, that is, stay'd forty days in the *Lazaretto*, where, if there be occasion, he must be purged and sweated, before they will allow him *Prattica*, that is, admit him to do his business in that Country.

4. I will only demand this Concession, That all men who live in a pestiferous Air, must receive and admit by inspiration, and through the pores of their Bodies, pestilential miasms, particles, or filaments, unless you do assert, That some men do not inspire deep enough, or their Bodies are less pervious, and have fewer pores, and those possibly very narrow, contorted, or of a screw'd figure,

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figure, in which case they being deprived of a facil perspiration, or rather expiration, must always continue very weak and sickly; but these crazy and feeble persons are generally found to be chiefly subject to the Plague, which destroys your Assertion.

5. It is upon the certainty, or at least a strong presumption of the forementioned Concession, that Physicians do unanimously hold, there ● no other infallible preservative against the plague, but what is implied in these three words, viz. *Cito, Longe, & Tarde*; in *English*, speedily, a long way off, and slow: that is, you must retire with all speed, remove to a far distance, and return very slow after the plague is ceased, lest it should not intirely be extinguishd. By the way only; this forementioned Expedient being judg'd so infallible, doth evidently overthrow the phantastio-Notion, whereby to explain the manner of agency  
of



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of sympathetic Remedies, viz. *Ung. Armar.* or Weapon-salve, calcined Vitriol, or sympathetic Powder, and such like, asserting, there is a chain of crooked particles linkt together, that extends from those Remedies, being guided by the association of some of the Ulcers, or wounded particles on a Rag or Weapon, to the Ulcer or Wound it self, being possibly at a hundred miles more or less distance ; which if true, would hold much more in pestiferous Miasms, that are spread over a small Region, or a great tract of Air ; though it's very possible, that a cloud full of 'em may be driven by the wind to a far greater distance, even over the Seas, from one Country to another, but not by continuation in the manner of chains extended to such a length ; so that we are only to read such like Histories or Relations, as we do Romances, both being oft written with an adorned stile, as if they were true and real.

C H A P.

C H A P. VII.

*Containing several inferences concerning the Plague.*

I. **F**ROM the Concession mentioned in the 4th paragraph of the preceding Chapter, I may infer,  
 1. That all men living in a pestilential Air, must be subject to the Plague by inevitably inspiring, and admitting through their pores pestiferous particles; though it's not a necessary Consequence, that every body that's subject to the Plague, must at one time or another fall into the Plague, because very oft those fore-mentioned particles are by the strength of Nature thrown out by expiration, and insensibly through the pores, as oft as they enter, or return. 2. That among those who are subject to the Plague, many happen to have the Plague mortally, many have it curably, and as I said  
 before,

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before, many among those that continue the whole time of the Visitation, never have it at all. 3. That many fall into the Plague in the beginning; many more when it is in its highest rage; and many when it begins to decline, and some several weeks and months after it seems to be quite extinguish'd. 4. That some do fall into the Plague immediately after the admission of pestiferous Miasms, others one, two, three, or four days, some a week, month, or several months after; and some also that have left the contagious Air, by removing to a far distance into the Country, have dropt into the Distemper in their Journey; others some weeks or months after their arrival at the place designed. The conformity of these Inferences to Truth and Experience cannot be denied by any of understanding and observation, that outliv'd the last great Plague.

C H A P. VIII.

*Of the analogy and resemblance between the Small-Pox and Plague.*

I. **I**T is the great analogy and resemblance between the Small-pox and the Plague, that hath given me the occasion of interweaving the foregoing Discourses, especially since the latter being so well understood by most in those enumerated Instances, will render the theory and practice of the Small-pox and Measles so intelligible, that according to my pretence in the First and Second Chapters, very ordinary Capacities will be qualified to make a decision in the Debate.

Wherefore, if I make the analogy appear, and give Reasons of those Inferences, the same will serve to satisfy the Objections and Queries, that may be made of the Small-pox.

2. In

2. In relation to the analogy, I say, 1. They are both contagious Diseases, and originally caused by malign particles received out of the Air into the Body, and with very little distinction, those of the Small-pox and Measles being in these Northern Regions admitted sometimes immediately after the Birth, though commonly within a few years after, and the other any time after the Air is loaded with pestiferous particles, which differ from the former in malignity only, *secundum magis & minus*.

From the next preceding Discourse you will infer, That since at all times some Men, Women, and chiefly Children, have the Small-pox stragling here and there (*sporadicè*) I do suppose that the Air is always indued with variolous malign particles in these cold Regions. Most certainly, I do suppose the said particles are ever floating in parcels here and there, as it will be explain'd  
here-

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hereafter ; and in resemblance to that particular, in some warm Countries, as *Egypt*, and many places of *Turky*, there is always a scattering (*sporadic*) Plague (which, as the Small-pox, is sometimes epidemick and universal) occasioned by the putrefaction, and putrid steams, the overflowing of the River *Nilus* in the former, and morassy Grounds of the latter do emit. And therefore for the said Reason it is, I have named the particles, or *effluvia*, or steams reeking out of the putrid grounds in these parts into the Air half pestilential, which in the time of the Plague (that may happen once in thirty or forty years) do pass into whole pestilential; and therefore it is, that commonly an epidemic Small-pox does precede the Plague.

2<sup>dly</sup>, They both occasion either an ebullition only, or a continual Fever, that may either be simply such (*synocha imputris*) or putrid, or highly malignant; for many have had a  
flight



slight Plague, that hath been attended with no other than an ebullition of the Blood; others with a simple continual Fever, or *synocha imputris*.

3dly, As some sort of Small-pox and Measles do appear mild, others malign; some mortal, others curable; and some never have either of them, though all are subject to them, in the sense I have exprest above; so in like manner some have been seized with a mild, others with a malign; some with a mortal, others with a curable Plague; and some have escaped it wholly, at least as to a visible appearance.

4thly, The common symptoms of shiverings and shakings (*rigores*) a great oppression about their Stomack and Heart, pains in the Back, Head-ach, a burning heat, and sometimes none at all extraordinary; a very high large strong quick pulse, and sometimes low, quick, (in others slow or moderate) unequal, and feeble pulse; the Urine in some very high

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high coloured, thin, without any hypostasis or sediment, in others citrin, with a pyramidal *hypostasis*, like unto a well-Urin, and in some few very pale, with a divell'd and disperst sediment; in some very few the Urine is bloody; excessive drought, though in others none at all, or very moderate; scabrous, dry inflamed tongues; in others white, foul, and slimy, and in some moist and well-colour'd; vomitings, looseness, *delirium*, or light-headedness, restlessness, anguishings, and jactitations, *vigilia nocturna*, or want of sleep, and commonly in the beginning drowiness, and abundance of others, though all various in every particular subject, are the same in both, differing only in degree. Besides, as in the Small-pox you have pimples, pale, red, brown or leadish, of an Olive-colour, and sometimes black; spots also intersperst between the pimples, as various in colours as these, oft very small, of the extension of Fleabites.

After

After these arise sometimes great tumors about the emunctories, in or about the Face, which turning to maturation, become sordid and fetid Ulcers, of a nature so malign, that I have known them to resist all manner of cure for three, four, or six months successively.

2. The Plague is ordinarily attended with spots of all complexions, whereof the black are usually call'd Tokens, (which the *Dutch* name Peppercorns) also with pimples equally various in colour, among which those that are of a shining purple red, are named Carbuncles, and soon after turning into a black Crust, is call'd a Coal, and is a perfect *sphacelus*, or mortification; with great and sometimes small tumors in the emunctories (are called *Bubo's*) also about the Nose, Eyes, Cheeks, Neck, and other parts, that exchange into the most fowl, malign and durable Ulcers; and are such, that  
some

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some have lost an Eye, their Nose, and a Joint through them, besides all the other Symptoms mentioned in the Small-pox, that are equally common in the Plague, excepting only, that generally here the Tongue is very dry, and usually the Patient is very droughty.

3. In respect of the second Inference, it cannot be doubted, that many do fall into the Small-pox, that proves mortal, and incurable *per se*, or accidentally so, very oft by the ignorance and unskilful boldness of Physicians; many others are cured by Nature, and a true *regimen* only of the six *non-naturals*, and particularly by abstinence, and rest, (*quiete & obstinencia*, as *Celsus* expresses it) that is, not tampering at all with Medicines or Remedies, but keeping quiet, still, and temperately warm from the crude, cold and rough Air abroad, and attended by a careful and unbusie Nurse. And many escape those Diseases,  
as

as I hinted before, all their lifetime.

4. The third Inference is plainly answered by many falling into the Small-pox in the beginning of a reigning Season, and many more in the height. Furthermore, as some may have, and have had the Plague two or three times; the like hath been asserted of the Small-pox, tho some, very few only, have had them the third time.

5. The fourth needs no proof, to wit, that some have been taken with the Small-pox soon after they are born; others some weeks, months, or years, though most within seven years, not many after thirty or forty, and very few after three or fourscore.

5. These Parallels and Resemblances may very justly challenge a ready belief from all men, that those Diseases are very near a-kin, and the Causes much the same, being no otherwise distinguishable than in  
D degree,

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degree, or *secundum magis & minus*, both being venomous and contagious. Wherefore, for further illustration, and that I may plainly shew you the manner how variolous and pestilential particles are return'd out of the retired parts of the Body and Humors, into the Small-pox, and pestilential Eruptions, I will give you my sense very briefly of the nature of Venoms in relation to the Body of Man, in the next succeeding Chapter.

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CH A P.



C H A P. IX.

Of Venoms or Poisons, and their Differences.

1. I Will begin with the knowledge of *Venoms*, first in their distinctions and differences; some are Venoms to the whole immediately and directly, that is, to the heart or brain; others to some particular entrail or bowel, as *Wheefels* flesh, and some *Indian* Juices to the Liver, causing a Jaundice of the deepest yellow, and an incurable weakness in the nerves; some to the Lungs, as a *Sea-hare*; some to the stomach and guts, as *Mercury* sublimate or precipitate, *Aqua fortis*, &c. others to the bladder, as *Cantharides*.

2. These now mentioned, and many more, are to be accounted whole Venoms; others are half Venoms, or demi-poisons, which are such as vehemently disturb the brain

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and heart, and imbroil the former for some hours, days or weeks ; such are Mandrake, Henbane, Hemlock, *Dutrua* Seeds, which latter are only energetic and effectual in the *Indies*, and not in other Climats, as *Opium* is a demi-poison here , being taken in a small Dose, and not in *Turky*, though in a greater doth become a whole poison. Some Venoms are most quick , as a certain juice of *Barbary*, wherein a Pin, Needle, or Dart being dipt, and afterwards making the least wound in the skin of any of the remotest parts of the body, killeth in few hours ; others are slow, and not so quick in themselves , or if most quick in themselves , are by mixture retarded, as Arsenic, or Orpiment, being mixt with *Opium*, or any glutinous substance, as Turpentine, Birdlime, Gum Arabic, and the like, which, according to the proportion of the commixt ingredient to the poison, hath been limited to days, weeks or months,

months, in the method and manner of *Madam de Brinvillier*, who poisoned her Husband, her Father, and two Brothers, for standing in the way of her Amours, was instructed by *Glaſſer* the Chymiſt, that publiſht a courſe of Chymiſtry, and being afterwards taken, with all his Poisons about him, at or near *Geneva*, they were both worthily executed at *Paris*, according to the *Arreſt* of the Court of Poisoners.

3. Some Venoms are internal, by being ſwallowed down; others external, entring the body by inſpiration, and through the pores of the ambient ſkin, as poisonous perfumes and ointments, arſenical ſteams in Mines and Caves, which are the quickeſt and moſt malignant of all Venoms. Of this external ſort of Venoms are thoſe, though not of the higheſt degree, which cauſe the Small-pox and Plague.

## C H A P. X.

*Explains the Nature of Poisons.*

I. **T**H E Nature of Venom is through its most subtil, piercing, corroding, and most cutting acute particles, to cause a *Διάκρισις*, or secretion, separation, or divulsion of the constituent or compounding parts of the heart or brain, as they are mixt or compounded bodies; or it is to decompose or disunite the composition or union of the heart and brain, or any other bowell that is poisonable in its constituent or composing parts; so that upon the operation of a quick Poison upon the heart, death must immediately ensue: such is the nature of some whole internal Poisons, as Arsenic, Realgar, Wolfs-bane; and of external, as the Sting of Rattle Snakes, and some kind of Adders, &c. In the same manner some have very speedily

speedily been cut off by the intrusion of pestilential, and variolous particles, though in most the venom is less quick, and oft retarded and obfuscated by other causes without, and a resistance it meets within the Body.

2. That the Air contains venenous particles of various kinds and degrees, and those so specifick, that they appear to be determined against every *species* of all Bodies that have life, is little to be doubted. First, in relation to Vegetables, it's oft observed, that both in cold and hot Seasons, showers of such venenous particles entring the whole bodies of Trees, or some of their Branches, do sometimes instantly, and other times in a day, two, or three, cause them to dye in the whole, or in their Branches, that shall look black, which can be term'd no other than a mortification, though vulgarly called a Blast, and doth as much deserve the name of a Plague, as the Mur-

rain in Cattle. And those venenous particles, that in some places, and at some Seasons, the Dew that lieth on the Grass, is imbued with, doth suddenly kill whole Flocks of Sheep; and that which causeth so general a mortality sometimes among Cattle, called the Murrain, can be imputed only to venenous *effluvia* of the Air.

3. In regard that those venenous Corpuscles, which destroy the life of Sheep, do not cause the same effect on all Cattle, it's convincing, they must be of various sorts in their figures, and as various in their motions.

4. That those venenous little Bodies are not at all times equally piercing, and acute, but sometimes act in a degree less malign, may be deduced from other malignant universal Distempers. resembling a Murrain all kinds of  
Cattle



Cattle are subject to, and therefore it may as rationally be granted, that the Plague and Small-pox have no other difference in their Causes, than a less acuteness in pestiferous particles.

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C H A P. XI.

*Expresses the manner of operation of venenous particles in the Air, whereby, and how they cause the Small-pox or Plague.*

1. **M**Y next Task is, to explain the *modus agendi*, or manner of acting of those venenous particles, whereby the Small-pox and Plague are produced; to the right understanding whereof, you are to keep in mind these three following Rules, or Maxims, whereunto you are to have recourse, as being necessary Antecedents, whence the Consequences I shall make, will naturally flow. In the first place, it must be granted, That all venenous particles do first enter the Body through the pores of the ambient Skin, then crowd through the pores of the Vessels into the Humors, or Juices, being least able to resist,  
thence

thence into the sanguin parts, whence they make their way to the more solid and spermatick. If this be denied, the manner of operation of a Mercurial Unguent, and a cinabrin fumigation will oblige you to assent. 2<sup>dly</sup>, Venenous particles do not always arrive so deep, as the solid and spermatick parts; either because they are less pointed, and grosser, or fewer in number; or because they meet with a stronger resistance, by the unsuitness of the figure of the pores they are to enter, or grosser and more close matter which they are to pass, or a greater number of spirits they are to encounter with, all which is evident in the said instance of a Mercurial Unguent, applied by friction, to raise a salivation, which in some Bodies it fails to do, by reason of the unsuitness of the pores they are to pass, or because it contains too small a proportion of Mercury to emit sufficient particles; or because the said particles are beaten

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ten back by the spirits of strong Bodies. 3dly, The concession of this doth allow, that venenous particles are always in motion, but quickest in the fluid parts, and slowest in the hard or solid parts. If, according to the phrase of Physick-men (for very few of 'em deserve the name of Doctors) it's replied, That all venenous particles arriving to the solid and spermatick parts, are there lockt up, and remain as it were dead, and without any action for many years; you are to be convinced by the late instanced Mercurial Ointments too copiously externally used, and Mercurial Preparations too frequently, and in excessive Doses taken, also by the *French-Pox* it self; the venenous particles of all which, or of each of those Remedies, being ill prepared, and worse applied, insinuating so deep as the solid parts, have there in some weeks, or months, and sometimes years, rotted or cariated the Bones of the Shins, Arms, Skull,  
Car.

Cartilages of the Nose, and other parts, (according to the observation of Authors) which is a pregnant Testimony, they have always been in motion, though much slower than in the fluid parts.

2. As to the explication of the manner of action or operation of venomous particles, in reference to Diseases of Human Bodies; I will suppose, according to the first and second Rules, that in an infectious Season there is a shower of variculous, or half-pestiferous particles crowded through the ambient Membranes into the mass of Blood; but you must not conceive, that every pore of the Blood is filled with the said particles, unless at the same time you will apprehend the Patient must be dead the next, or very few moments after, without ever having had the least strength of spirits to expel them, and consequently to give the least appearance of the Small-pox, or pestilential Eruptions.

Imagine.

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Imagine then, here is the hundredth or thousandth part, or to make it more intelligible, the eighth or ninth part of the pores (by way of supposition only) filled by venenous particles; or to render it more plain and easie, in the space that eight or nine drops (or *globuli*) of Blood are contained in, there is the ninth middlemost drop almost filled in its pores with venenous particles, whereby the vital spirits, that are in the said pores, are for the greater part or number (more or fewer) expelled, who fly to the next cirrounding eight pores (or *globuli*) where being too much crowded, are put into a violent motion, thereby (*vicissim*) lifting up and depressing the pores of these cirrounding eight drops, which give me the *idea* of an ebullition they make, whereby those eight drops are separated, or do separate themselves by their spirits from that one middle drop, that is so tainted, and begun to be secreted,

or



or disunited, or decomposed in its constituent parts, or (if you please) in its composition, mixture, or constitution, that it can never become again homogeneous with the said eight cirrounding drops; which therefore they by the said ebullition do endeavour to throw off and expel, through or by means of the Arterial mass (moving to the circumference of the Body) to the extremities of the capillar Arteries, whence being thrust-ed to the inside of the Ambient Skin into a small round figure (which then is either a *papula*, or smaller pimple; or a *pustula*, a greater;) because that expelled venenated drop is crowded from all sides, and therefore must be round; and must also be small or not great, because it elevates or divels the Skin (*cutis*) but a little from the subjected Membranes, to which it adheres very close. Now in case the quantity of three or four drops is successively thrown to the same place of the Skin,  
then

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then it must form a pimple three or four times bigger ; whence you may easily conceive , why in the Small-pox the pimples are not all of one bigness ; some few being bigger than the rest, the Nurses call the Master-Pox.

Moreover, these variolous *globuli* arriving to the inward or under part of the Skin (now pimples ) do not so much elevate the Skin, as to make the said pimples visible, before they have through the violent motion and combat between the few vital spirits, and venenated particles contained in them , widen'd or broken the pores of the Skin circularily, to above half the thickness of it, and then become very visible, whereas before they were only discoverable by the touch ; so that the pimples of the Small-pox may in most be felt under the Skin by a moderate pressure 24 hours before they appear to the view, and in some whose infected *globuli* are moved slow, they may be perceived  
by

by the touch two days before; tho in some few others the said *globuli* being thrust out very speedily, they are scarce perceptible six hours before, and in some very few, an hour, or scarce at all, before they become plainly visible:

3. From the Contents of the foregoing second Paragraph these Consequences must necessarily flow.

1. Upon the first moment of the variolous or pestilential particles attacking the Blood in any of its small parts, there must at the same instant be an ebullition, together with a separation, or an endeavouring to boil up \*, and to separate the infected small parts, drops, or *globuli* from the sound; as is visible in all external small mortifications, where the ambient sound parts do immediately endeavour to separate themselves, and throw off the mortified part; and as Nature is never endeavouring

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\* Being an effervescency, or a simmering of the Humors.

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to make a digestion or maturation of the mortified part, because she can never make it homogeneous to the sound ; so in the Small-pox, Measles and Plague, there is no digestion to be expected, but separation. *2dly*, Where the Blood is very fluid, thin, little glutinous, and lively (as in Children) the ebullition and separation happens instantly ; but it is either a day, two, or three, before the venom can pierce through the common Integuments, to arrive to the Skin. *3dly*, In persons that are grown up, there happens at the instant of infection, either an endeavouring to an ebullition and separation, which possibly lasting but a little while, because the miasms cannot make their way in, and being only superficial, are very oft thrown out again ; or a strong ebullition, which for the most part turns into a putrid Fever. Many other particulars I am forced to pass by, to keep within my purpose of a small Treatise.

4. The

4. The venomous *globuli* or drops of the Measles being much less, and of a thinner body, are moved much quicker, in manner that they scarce make any stop or elevation in the inner part of the *cutis* or Skin, but pass to the outward part thereof, where meeting with a stop, occasioned by its density, do elevate the *cuticula* or upper Skin, which being of a very thin pliable nature, is not raised into a very small obtuse, but a very little acute or sharp pimple, which feels and appears almost like the roughness of a Goose-skin, but red; notwithstanding little pimples sharpned a-top they are. The said morbillous *globuli* being partly of so thin a substance, and thereby fitted to pass through the pores of the upper part of the *cutis* (*quaqua versus*) every-where round, they are very frequently spread into large efflorescencies, or broad *exanthemata*, which the Nurses commonly call great rednesses, or large red spots; but some  
of

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of the Learned Blockheads will needs have them named an *Erysipelas*, which ever is attended with a great burning heat, and a small elevation of the Skin, which in the Face commonly withdraws it self, by leaving a large Bladder filled with water behind it. To add other differences will take too much time. The *French* observing those rednesses to be common attendants of the Measles, rather chuse to name that Distemper *la Rougeole*, or redness, than any proper name to denote the Measles.

He that mistakes a Rash (a term of art used by Nurses) for the Measles or Small-pox, can be no other than an illiterate drunken bold Fool, deserving the recompence of a *Russia* Physician in the case of a great D. dying under his hands, who ought to know, that *Herpes* is Latin for a Rash, of which there are two sorts, *Miliaris*, and *Exedens*; but there being much less resemblance between an *Herpes* and the Measles,  
than



than between a Rat and a Wheezel, it's not worth my while to teach the difference.

5. In good truth there is some resemblance between what Nurses call the Red-gum (known to Ancient Physicians by the name of *Papulæ rubentes*) and the Measles, notwithstanding Nurses usually know their difference with a glance of their Eye; and further tell you, That a Red-gum comes in a minute, and in less than three more, flies all the Body over like Lightning, and itches so extreamly, that one can scarce be a moment without scratching; but in all other particulars one's health is not in the least changed or impaired by it, and the Nurse-Doctrices ordinarily cure such Patients by one night's sweat with a half dozen spoonfuls of Poppy-water, and three or four of Plague or Treacle-water, and the most knowing of their Profession will add the bigness of a Nutmeg of *Diascordium*, and this to be given

given to any Red-gummer of twenty years of age, or thereabouts.

6. After this short digression, tho within the compass of my Subject, I ought to return to the explication of what succeeds, next after the throwing out of the variolous *globuli*, or Small-pox, which is their maturation, or turning into matter of various consistencies and colours, being either thick, or thin, ichorous, or sanious, white, whitish, red, greenish, Violet colour, leadish brown, and black. They are either of a great kind, or small; single, or double; which are of the bigness of two ordinary ones, and running into one another, which the Nurses call (and the Physicians after them) the Flaxt-pox, corruptly for the Fluxt-pox, because they flow one into another, and that sometimes in such a manner, that the whole face seems to be an intire absces, whose covering turning into one intire Scab, peels off all together. They either appear  
full

full and round, or low and flat. They are either hard and obstinate to maturation, or soft and easie. They are also either abiding, or apt to go in again into the Vessels, or only apt to sink a little. They appear either in a greater number, or lesser; of which latter the bigger are call'd by the Doctrices the Swine-pox, and the lesser the Chicken-pox. Either they come out gradually, (which is most common, and best) in three, four, or sometimes five, and (though rarely) in six days; or else they come forth all in few hours; or sometimes with intermissions, some appearing pretty abundantly the first and second day, or the first day only; then happens a stop for a day, and sometimes longer, after which new ones spring forth again. They appear most and biggest in the Face, Hands and Feet. Some go off without leaving any fordid Ulcers behind; others are succeeded by very malign Ulcers of a long

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long continuance ; others again leave so much impurity behind them, that after the Small-pox seems intirely cured, and the Scabs peel'd off, and the Patient abroad, they do occasion malignant Imposthumations, and several internal and external Diseases, which are not cured sometimes in several months after, and other times leave a weakness of the Bowels during life.

7. That the Small-pox, or Measles, should be termed critical evacuations by most Physicians, I can in no-wise apprehend a proper or genuin expression ; for a *crisis* strictly is only applicable to continual putrid Fevers, whose morbid matter being first digested, then separated, and afterwards suddenly expelled by Sweat, Urin, Stool, Hemorrhage, or more leisurely by congestion, is thrown out into tumors. \* As for any malign

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\* However crisis in a large acceptation may be used for a sudden explosion or expulsion of any matter, malign or other, in a putrid or imputrid Fever ; but then the putrid matter must be digested, before Nature can be at leisure to expel the malign matter.

matter,

matter, they all hold, that it is not capable of digestion, much less is a venom, the highest of malignities; and therefore to me it seems absurd to name them critical Evacuations, any more than other Poysons that are vomited up, or expelled through the pores in great blotches and pimples. If you will suppose, that it is a critical Evacuation of the putrid Fever, and that the Matter of the Small-pox is only a putrid Matter that occasions the Fever \*; then it must follow, that all Children have a putrid Fever with the Small-pox, which is universally denied by all Physick Authors, and Physicians; asserting, That in Children for the most part, there is only an ebullition of the Blood, in some few a continual imputrid Fever, and in very few a putrid Fever, and then chiefly, when the Small-pox are epi-

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\* *And therefore, as I said elsewhere in a large acceptance, or consider it under this restrain'd sense, it may pass for a critical evacuation.*

demick. Moreover, here is another gross mistake, The ebullition, continual imputrid, or putrid Fevers, are not essential, but symptomatick Fevers, or a symptom of the Small-pox; for generally speaking, Had they not been seized with the Small-pox, they would have been free of that Fever, though it's possible for one in a putrid Fever to be taken with the Small-pox, and then they are under two sorts of putrid Fevers, one essential, and the other symptomatick, in the same manner, as a man in a putrid Fever may take a strong Poyson, which will cause another symptomatick Fever, in either of which cases the Patients become mortally sick.

8. Before I proceed in giving you my sense of the manner of Maturation, I think it not amiss to give you the reason, why the term of *globuli*, (or little globes, or bowls, expressed in *English* by the notion of drops) is made use of in the explication of the  
pro-



production and expulsion of the Small-pox. If you will give credit to the experiment of the Microscope, whereby some do pretend they have discern'd the Blood to consist of *globuli*, and each of those they affirm (I presume by supposition) doth comprehend five or six lesser *globuli*, as a drop of Quick-silver (I suppose) doth by agitation, or shaking, fall into many little round drops. Whether this be so or not, it's observed, that all Liquors are divisible into round drops, or *globuli*, and therefore it may be judged proper enough to have used them for the intent above-mentioned. However, neither you nor I are obliged to apprehend the Blood under that constitution, and therefore we will suppose it to be a continuous fluid substance or liquor, which, when-ever it happens to be divided in any part of it, its parts, as all other liquors, are ever divided or separated from that which doth divide it (though it be a square

E 2      Body)

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Body ) circularly ; for instance, If you throw a Brick into the water, the parts of the water being continuous, are separated circularly, as appears by the round streams the water is forced into, by the Brick breaking it, which renders it plain, that the Blood is separated from the formerly-mentioned malign particles in a round figure. Secondly, The variolous particles entring the Blood through round pores of the Skin and Vessels, can enter the Blood in no other figure, but in a round one ; so that necessarily the Blood must be infected in drops or *globuli*.

9. Those infected sanguin drops being formed into Red pimples, or Small-pox, in the upper part of the Skin meeting with a fresh supply of variolous, nitrous, and other particles out of the Air, which now is much nearer, there happens a new great agitation, ebullition, and combat between those and the Spirits, that were remaining in them (those  
bloody

bloody drops being out of their proper Vessels, which, whilst in them, never do, or can, be turn'd into Matter) whereby those bloody drops are broken in their fibres, and rarefied, by which rarefaction they lose their colour, if red, and are converted into white; for as density causeth the reflection of the Air to seem black, so on the contrary, rarefaction must occasion a white. If those bloody drops of the Small-pox happen to be condensed by the total extinction or expulsion of the Spirits in them, by those fresh adventitious particles, then according to this *Phænomenon*, the Small-pox must turn black. So that according to the said degree of condensation and rarefaction, they turn into violet, green, leadish, and all colours, being only degrees from white to black.

The hardness and stubbornness of maturation in the Small-pox doth depend on the mixture or constitution of the Blood of some, consisting

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of tough and fibrous parts, being naturally such, or so render'd by the malign heat of the putrid Fever that attends the Small-pox. The toughness of the Blood is also in a great measure the cause, together with the weakness of the Spirits, being too much over-power'd by the variolous adventitious particles, why the Small-pox are separated, and consequently expelled very slow, and sometimes not at all.

10. The Small-pox happen to be either sanious, or ichorous, from the acute malign particles cutting the fibres of the Blood, and from the putrid malign heat, occasioned by the said particles, melting or fusing, as it were, the sanguin infected drops.

11. The Small-pox being thrust out, are kept up in the Skin, without sinking, or flatning, or returning back into the Vessels, or mass of Blood,

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Blood, if the spirits are any thing vigorous, and hold up against the malign adventitious particles; but on the other hand, the Spirits sinking, and being over-power'd by the malign particles, the Small-pox is by them forced in again, the said particles constantly crowding into the Body out of the Air (as hath been declared in one of the former Chapters) unless the spirits are strong enough to withstand them.

12. The Face, the Nose, inside and outside, Hands and Feet, are commonly fullest of the Small-pox, because both the former being usually uncovered, and most exposed to the Air, do admit a greater number of variolous particles; and the Feet, though covered, yet being next to the ground, the variolous particles do copiously with the damps of the ground strike into their pores.

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13. The reason and causes of other differences of the Small-pox above-recited, and of the Measles, may be easily assigned by the Contents of the foregoing Paragraph; likewise most other Queries and Doubts touching the said Diseases and their various Accidents, may clearly be resolved by the Rules, and other Discourses set down in the preceding Chapters.

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CHAP.



C H A P. XII.

*Of the Signs in general of the  
Small-Pox.*

I. **T**HE Signs of the Small-pox ought not to be run over confusedly, as all Authors do; taking it from one another; but ought to be digested in such an order, that we may with more ease arrive to a discovery of the Distemper. We ought therefore, first, to know the signs of an Ebullition, which usually precedes the eruption of the Small-pox in Children, though sometimes there may be in them a continual imputrid Fever, and now and then a continual putrid Fever, or a *Synochaputrida*.

2. To the second Class belong the signs of a putrid continual Fever, mixt with some malignity, not as it is a cause of the Small-pox, but as it is an effect, or rather a symptom.

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or concomitant \* of the venom, contagion, or infection of the Small-pox, and commonly precedes the eruption of them, and is usual and ordinary to such as have, or are to have the Small-pox, that are of riper years, and are grown up.

3. The third Range will comprehend the signs of a putrid, and very malignant Fever, as it's also a symptom, or coincident of, and with the venom of the variolous adventitious particles, and do likewise precede the eruption a very little time, and sometimes the eruption follows soon after, that is, in few hours, and this is also most common to persons of years, of a very ill habit of Body, and very debauched Livers.

4. After the recital of these diagnostic signs, the next following Chapter will comprehend the Prognosticks.

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\* If you take the Small-pox, as they are latent, and before they come out, then the Fever is a concomitant, or a symptom; but if you will only term them Small-pox, when they are come out, then the Fever doth commonly precede.

C H A P. XIII.

*Of the Diagnostick signs of a variolous  
ebullition of the Blood.*

I. **T**He signs of a variolous ebullition of the Blood are a floridness, and a little bloating of the Face, and of the whole ambient Skin of the Body; a frequent blushing, and recurrent redness, a drowsiness, heaviness, and giddiness, a distending and heavy pain in the Head and the Back, the Eyes a little fiery by the swelling of the Vessels in them, and glazy; sometimes waterish; a sloathfulness to stirring and moving, a heat more than ordinary all over the Body, but not a smart violent burning; the Appetite lessened, and sometimes wholly lost; a fulness about the Hypochonders, frequently a vomiting of slimy and cholerick matter, tho notwithstanding commonly there is a weight and great oppression

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fion about the Stomach, which they usually express to be about their Heart, and which their vomiting doth not in the least ease or abate, but they feel themselves rather worse; sometimes there may be a looseness, but for the most part there is a costiveness. Sleep disturbed and interrupted with fiery frightful Dreams. Their breathing thick, and quicker than usual; frequently attended with a Cough, and sometimes with a hoarseness only; a fretfulness, and not caring to speak; neither commonly will they so much as complain. Their Urin is thick, whitish, troubled or turbid; the Pulse quicker than ordinary, not much unequal, but large; a great beating, or pulsation in the Temples; a proneness to sighing. Some few sneeze oft, and their Nose will itch, most do not. Some Children after three years old have all these signs, some the greater part of 'em, and some but few of 'em, according to their  
more

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more or less ill predisposition of Body, and the degrees in quality and quantity of the variolous particles, that are enter'd into their Bodies. These are the signs of the first and second days.

2. The second, or sometimes the third day, the vomiting is gone off; and the oppression about the Stomack usually is removed on the third day; but then they begin to be droughty: Most of these Symptoms are then grown less troublesome, and seem to be more easie. On the third day the skin all about their Body and Face appears a little more swelled; and then it is you may feel the little round knobs under the skin, if you make a pressure with your Finger. The fourth day usually they appear. Those that may be named the Quick-pox, appear the third day; the Slow the fifth: They are oft interlined with Red spots like Fleabites, and sometimes large rednesses.

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3. It is generally on the third day they feel a pricking all about their skin; that being over, they are apt to complain, that they are a little sorish. They are commonly very small at the first, somewhat bigger than a Mustard-seed, growing bigger by degrees.

4. Those that have Hoarsnesses, and dry Coughs, are subject to have the Small-pox much in their Throat and Wind-pipe. Some are apt to be Light-headed (delirious) the day or night before they break out; and likewise they are apt to be so, if the Small-pox come out slow, or revert.

CHAP.



C H A P. XIV.

*The signs of a variolous Putrid Fever.*

I. **T**HE signs of a putrid continual Fever, and symptomatick of the Small-pox, are almost the same with those of an essential, excepting that the febril symptoms in the Small-pox come many in a crowd together, which in the other do arrive gradually; besides, the Urin for the most part from the beginning appears thick and red, like that in an intermittent Tertian, and continues so without much variation for the most part of the time, until the Small-pox begin to dry, and then there begins to be a separation of a white sediment, and the Urin grows paler. Likewise the Pulse at the very beginning is strait, low, quick, and very uneven; the Countenance of the Patient looks wild. The Small-pox doth most commonly  
seize

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seize persons that are grown up, upon change of Air, frequent Debauches, immoderate Eating, upon a great Cold of a long continuance; also by a fright or fancy, by seeing any that had the Small pox lately, the spirits in a fright, or strong imagination attracting the infectious Air, that such expire, or hangs about their Cloaths; usually the Head begins to ake first, with a weight and drowsiness; then they are oft hot and cold, pale and high-colour'd successively on a sudden. Afterwards they are taken also on a sudden with a violent shivering and shaking, which causeth them to take their Bed; where, after some small time they grow very hot, and burning, and high-colour'd, their Face appearing then bloated and swell'd, their Eyes sore with distention, complain of a sickness at their Stomach, great oppression at their Heart; sometimes they vomit, others do not vomit; their Tongue is dry and red; they have:

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have a great drought, their breathing very thick and short; those that are plethorick have a Cough, and spit much, some do not spit; they are apt to be suddenly hoarse, and continue so; they complain much more of faintness in this Fever, than in an essential one, and sigh much; some grow light-headed on the third or fourth night. The days of the eruption of the Small-pox in Men or Women are much the same as were mentioned in the preceding Paragraph.

2. About the eleventh day the Small-pox are commonly (not always) at the height; and at which time the Physicians tell you, that you have a second Fever. No doubt but it's the same Fever, only the heat is much augmented, because then the pimples are turning into matter, according to *Hippocr. Aphor. Dum pus conficitur, &c.*

3. After they are come to matter, they scab, and dry in three or four days,

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days, though sometimes they are not all dry in a week ; some few of the largest and worst have remained in some three weeks, or longer, before they have been dried.

4. Though most of the before-mentioned signs do accompany the Small-pox before eruption, you must not imagine all do in all persons ; for sometimes they fall directly into a burning, without shivering or shaking. These signs, if happening at Spring and Fall, (especially the preceding Winter or summer having proved very rainy) and to those that never had the Small-pox, make the discovery of the Distemper more evident to you, and much more, if any of the Family have lately had them ; or if they have been at any House, where any lay sick of the Small-pox.

5. Those that never had the Small-pox, falling into a sudden loss of strength, frequent faintings, violent headach, a breathing in quickness and shortness almost stifling, a *delirium*,

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*rium*, a continual drowfiness, or wakefulness (*coma soporosum vel vigil*) a very quick, low, and uneven Pulse, and the Urin notwithstanding like to those that are in health, and very frequent reciprocations of being high colour'd and pale, give manifest signs of being seized with a malignant variolous Fever, upon which very soon appear a few stragling Small-pox of an ill colour, which are apt as soon to go in again. Hereupon usually happen great tremblings of the Arms and Hands, faltering in their Speeches, Convulsions, &c.

CHAP.

C H A P. XV.

*Of the Prognosticks.*

1. **T**O speak generally, the *sporadic*, wandring, errattick, or straggling Small-pox, carry much less danger with them, than those that are epidemick, popular, or common, which seldom appear without a great mortality.

2. The Small-pox in Children are much less dangerous, than in those that are grown up, because (as I said before) in the former, you have only for the most part an ebullition, and in some few an imputrid continual Fever; and in the latter very oft a continual putrid, or a malign Fever; the cause is, that in Children the Blood is faster or closer mixt, and more homogeneous, they feeding for the most part upon a more single diet, their Bodies are cleaner; whereas, in those that are grown



grown up, their Blood is looser, consisting of more heterogeneous parts, their Food more various, and their Bodies fouler.

3. In old Men and Women they are the most dangerous, and commonly putting a period to their days.

4. The best conditioned Small-pox are a florid red, moderate in number, bigness, and softness; for if too soft, they prove upon maturation, sanious, or ichorous; if hard, they are very slow in maturation, and sometimes so rebellious, that they will not come to matter at all, and then they are mortal. They ought to come out on the third, or fourth day; to be all perfectly turn'd to matter on the eleventh; and dried and scabb'd by the fourteenth day; those that come out slow, are very dangerous.

5. Those that are pale, signify feebleness of the spirits; those that are deep red, and inflamed, are worse; greenish, worse; violet or leadish,

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leadish, worse and worse ; the black, worst of all.

6. The Pox beginning to come out, the symptoms ought to abate; if they do not, it's a sign of a latent venom, and may prove mortal. It hath happen'd, that some have had the Small-pox in a small number, and kindly enough ; yet when they have been all dried, on the fourteenth day, and sometimes before, a new sharp putrid Fever has arrived, upon which some few days after, the Small-pox have come out on fresh, and have been thrown out in great numbers.

7. To have few is best, provided the other symptoms do abate upon it; for that's a sign the venom was not great, and all is come out ; but if the symptoms continue, or exasperate, it signifies Nature is weak, the venom strong, and a great deal of it is remaining in the Body. So likewise if the Pox be numerous, the other symptoms abating, the party  
may

may do well enough, though they should flux into one another; but to have many, though turning into matter at their seasonable times, the other symptoms not remitting, the party stands on a precipice. The chief particulars to be observed, are the Voice, or Speech, the Breathing, the Pulse, the Understanding and Memory, trembling or not trembling of the Hands, and tendons of the Wrists, sleep or wakefulness, lying quiet in bed, or being anxious, and throwing ones self up and down.

8. The Pox going in and out straggling, denotes a struggling between the Venom and the Spirits; which renders the Victory very dubious; but if they strike in all together, Death is at the door.

Tho the Pox be florid, or well maturated, if interspersed with Olive-spots, or Spots like Freckles, or Black Spots, it's Mortal, much more if the Pox be of an Ill Colour.

9. Bloody

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9. Bloody Urin, or any hemorrhage, be it at the Nose, or by bloody Vomits, Stools, or the ordinaries of Women, after the eruption are all most certain deadly forerunners; likewise if the Pox bursting of themselves ouse out blood instead of matter, it is the message of death.

10. If a *Delirium*, or lightheadedness continues after sleep, either before the Pox are all come out, or after, it's very ill. A brownish, dark, or black Urin is deadly.

Some have died on the seventeenth and eighteenth day, upon the taking of a Clyster only, after the Small-pox have been all, or most come out, turn'd to matter, dried away, and the person seemingly well and recovered, so as to eat his Vi-ctuals, walk about the room, and all other symptoms vanisht; either because the malign evaporations, which always steem out of the Body for some time, (in some longer, in others shorter) after the Small-pox have been  
been

been quite gone, by too soon emptying the Body by Purges, or Clyster, or by putting on fresh Linnen, or shifting the Sheets too early, have been shut up in the Body, by stopping the pores of the Skin; or because the same person, after being well, hath drawn the same infection back again; or rather, because the same venomous Particles, which were thrown out by his late Disease, are crowded in again. For the avoiding of which two dangers, I usually keep them to a medicinal Diet, and continue the same Antidotes, though in lesser and fewer Doses, and forbear purging, until the whole month be expired.

11. The matter running too long out of the inward angle of the Eye, turns into an incurable *Fistula lachrymalis*, by corroding, or eating away the little lachrymal Glandul.

12. A large Pox breaking in the Horny-coat of the Eye, in many causeth blindness.

F

13. A

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13. A Cough remaining after the Small-pox, oft turns to a Consumption.

14. A malignant variolous Fever is incurable, and very suddenly mortal.

15. A *Ptyalismus* or salivation happening sometimes, signifies the danger of the Small-pox to be past; wherefore you are not to imagine it to be critical, in regard it appears not, before the Pox are broken out, maturated, and drying away; and for that reason it cannot be supposed to carry off any part of the malignant matter, which is requisite to make it critical. The Humors having been extremely stir'd, and rarefied, as appears by the great swelling chiefly of all the parts of the Face, and in some measure of all the Body, there must of necessity have been a large quantity of *Lympha* separated, and impelled into the Glanduls, which the spirits having conquered the Distemper, are at leisure to throw off;



off, so that it seldom happens, but where there has been an extraordinary swelling of the Face, and other parts.

16. Touching the Measles, they are usually not so dangerous with us, as with those of a warmer Country; they generally are discuss'd in four, five, six, or seven days. Notwithstanding sometimes they are of equal danger with the worst of Small-pox, if they happen to be of a blew, brown, or black colour, and attended with a *Delirium*, Looseness, great oppression at the Heart, &c.

17. As there is an incurable Pox caused by the highest venom and malignity of that sort, most speedily mowing down the Life of a Patient (as it were) with one stroke, by a most violent irruption upon all the Bowels, and sudden overwhelming all the Spirits at once; so likewise every other kind of Small-pox, even that of the least venom and malignity, may by contrary applications be

render'd as incurable and mortal, which is made evident by the comparison of a House, that being set on fire in all its apartments, is impossible to be preserved by any means whatever; and the same House being supposed to be on fire in the least part of it, if you endeavour to quench it by throwing Pitch, Rozin, Brimstone, and Oil upon it, will in a short time be as impossible to be preserved, as the other before-mentioned.

18. Whence I infer, That a *Sporadick* Pox in a Child, attended only with an ebullition of the Humors, though in a benign season, the ebullition may by contrary remedies be turn'd into a putrid continual Fever, even into malignant, and the Small-pox thereby stopt from coming out; or may be turn'd into a violet, brown, or black colour, whereby it shall become equally mortal with an incurable Pox.

C H A P. XVI.

*Of the Practick, relating to the  
Small-pox.*

1. **B**Efore I proceed any further,  
I would endeavour to prevent  
a prejudice in you, touching what  
you will read in the following Dis-  
course; and abate the severity of  
your Censure of what you have read  
already, consisting in Theorems con-  
trary to the received Opinion of the  
universality of your most Learned  
Physicians. Now that there is a  
possibility of my being in the right,  
I will only recommend this to your  
thought. Suppose, among the *Ro-  
mans*, that Wise and Learned Peo-  
ple, there had been one, who had  
declared to them, that there was no  
such thing as a particular God of the  
Corn, another of the Winds, &c. that  
there was another World near of an  
equal extent of ground, to what they

had under their Dominion; that he had heard of a Stone, that always pointed to the North, by the help of which a Ship might be guided thither: That there were People on the other side of the World, whose soles of their Feet went diametrically against theirs; and many more such like Discourses; all which they would have rejected as idle and phantastick. Certainly no person of sense but might justly blame them for their prejudice, without hearing and weighing the grounds and reasons that might be offer'd, notwithstanding the generally received Opinions among them.

Having premised this, my next Affair is to treat of the Curative part of the Small-pox.

2. Physicians pretend to cure all Diseases by way of *indication*; that is, a shewing, or manifestation of what remedy every Disease, cause of the Disease, or symptom, doth require, or point at; wherein the Disease,  
ease,

ease, cause of the Disease, or symptom, is called the *Indicant*, that is, Manifestant, or Shewer. The Remedies are named *Indicata*, or shewed unto, or pointed at. For instance, The indication of a Fever, being (in their sense) a hot Disease, is to cool; here the Fever is the Indicant, and points to a cooling remedy, which is the *Indicatum*, or remedy pointed at.

Now let's ask this Question, being first in order, What are the Indications in the Small-pox? and wonder what a mire the Physicians have got themselves into by their common received Opinion. I know very well, they cannot make an answer to that Question, without answering another previous one, *viz.* Is the Small-pox a hot, cold, moist or dry Disease, or is it a venomous Disease, i. e. *morbis totius substantiæ*? I presume, they will, and do chuse to term this a Disease of the whole substance; that is, a dissolution or secretion of the mixture of the parts; and

the Small-pox being an universal Disease of the whole Body, it follows that the mixture of all, and every one of the parts of the Body, must be under a dissolution, that is in plain terms, a gangrene, or tendency to mortification; to what an absurdity of expression are the Learned Tribe of Physicians driven to? This being granted, then the chief indication is to expel the malignant matter, (as they call it) which being in all parts of the Body, it follows, you must drive it out of every part. But by the way, this is an indication taken from the cause of the Disease; whereas that drawn from the Disease, is to put a stop to the dissolution of the mixture, or gangrene of all the parts, which, as I conceive, is impossible, and very absurd. However, we will take it so, that the chief indication is to be taken from the cause, which is to expel the venomous or malign matter. The *Indicata* are such Remedies, that have a power to throw  
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out the matter to the external pores, or circumference of the Body, because Nature doth tend that way. The Remedies that are indued with such a faculty, are Sudorifick, or Diaphoretick, that is, such as force sweating. I cannot agree, that this is the first indication, but rather that the first is to assist Nature in the separation, as I have made plain in Chapter 8. of the Malign Matter; for if you go to drive out before the said matter be loosned, and separated from the sound parts, it is anticipating the work, and not possible to be done, and forcing the spirits from their work of separation; in the mean while, the malign matter gets ground, by infecting the sound next adjacent parts, so that at last you shall have very little separation, and less expulsion, and the Patient must necessarily dye by the killing Error of the Physician.

Wherefore this Rule evidently follows; until Nature begins to shew

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a separation by expelling some part of the matter, (which, as I said before, is three, four, or five days) you are only to keep the Patient in a temperate or moderate warmth; and not keep too great a fire in the room, or overload the Patient with Bedcloaths, forbearing all hot inflaming Cordials, of which I shall give my Opinion more largely below.

3. On the other hand, the error is no less murtherous, in keeping the Patient too cool, by setting open the Windows, and drawing open the Curtains, to let in the Wind and fresh Air, and by permitting the Patient to cool himself by drinking of fresh Small-beer in what measure he pleases, rendering it more cooling by dropping into it Spirits of Sulphur, Vitriol, or of Salt, all which could be invented, and practised by no other, but one that was by a Country Apprentiship brought up to be a small Surgeon, and by his unparallel'd Confidence invading the Art  
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of Physick, had some years after fifty obtain'd a Degree of Doctorship by paying the usual Fees, without performing the least Exercise. That such a Hog should be imitated by those, that look upon themselves to be of a higher form, may deserve all peoples wonder, and be judg'd to be of little better qualifications than their Rustick Master.

What these Remedies are, that have been, and are usually prescribed, you will read by and by.

4. The sign before-mentioned appearing, that there is a separation, you are then to assist Nature in the expulsion, by gentle and moderate Sudorificks; for as she is moderate, and gradual in the expulsion, you are not to spur her on too fast; if you find the expulsion too slow, you may quicken it by Sudorificks, specifick in that case, of a greater force; but if the expulsion happen to be too violent and quick, you must forbear all manner of Sudorificks, and expect  
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the work of Nature; for otherwise you will extremely spend the spirits, and occasion the Pox to flow one into another, which you will prevent, in giving Nature time to make way for future eruptions, by reducing the foregoing to a lesser volume through discussing some part of them insensibly. It is in this case some testaceous Powders are of use, to moderate the too fierce career of the eruption, they being in no wise sudorifick *per se*, or driving out, but sometimes *per accidens*, which ought to be taken notice of particularly by all persons, that pretend to cure the Small-pox; for the distinction of Medicines, and their proper times of exhibition, ought to be regarded more in this Distemper, where the least mistake causeth the commission of a deadly error, than in any other, where it may be retrievable.

5. Though the indication taken from the principal, and immediate internal cause of an internal Disease,  
is

is the first and chief of all others in its own nature, and ought always to be chiefly regarded; yet it is not always the first in execution; and therefore Indications drawn from Causes more remote, and such as either are adjuvant, or impedimental, though subsequent, and of a much less regard than the principal, do precede in respect of their execution. For instance, A wound received on the Leg doth chiefly and principally indicate the Union, or the union of the solution of the *continuum*; but before you can come at it, here are indications to be taken from the Shooes and Stockings, and the hemorrhage (if any be) which must precede in execution, which indicate, that the Shooes and Stockings are to be pull'd off first, and then the hemorrhage to be stopt, before you can arrive to answer the chief indication, by uniting of the lips and sides of the Wound together. In the same manner, Physicians do all agree,

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agree, That the Humors being peccant in quantity, and quality, which are their Shoes and Stockings, give an indication of their being removed, by bleeding, and purging, which they tell you, must necessarily precede in execution, before you can well arrive to the malign matter, for to expel it through the pores, which makes the second, or third indication. The last indication, which doth oft require a precedency in execution, before any of the former, is taken from the urgent symptoms; as a hemorrhage (be it of the Nose, or by vomiting, or stools, or by the Lunars of Women) a looseness, bilious and slimy Vomits, &c. pointing, that the said symptoms must be removed, or at least considerably abated, before any attempt can be made by the former indications. What multiplicity of Errors are committed in all these by Physicians, and how few by Nurses, and motherly Women, in so much, that  
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ten do escape under the careful management of these, and by doing little or nothing, to one of the others, by reason of their ignorance, and unskilfulness, in not making observations, whence such certain Rules may be establisht, that may direct them in their conduct of previous bleeding, vomiting, and purging in the Small-pox and Measles; this (I say) will be my next work, in examining of the whole matter, and making it evident by undeniable Rules, and received Maxims.

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CHAP.

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C H A P. XVII.

*Of Letting Blood in the Small-pox,  
and Measles.*

I. **F**irst, touching Bleeding ; it is a general Assertion, and Practice among Physick-men, That all or most persons, that are grown up, and have the Small-pox, ought, and must be blooded before the eruption, that is, in the beginning, namely, on the first, second, third, or fourth \* day. 1. Because all such persons have Humors, that are peccant in quantity. 2. Because Bleeding is an experienced remedy against the putrid continual Fever, that generally attends the Small-pox of Men and Women, by taking away part of the burthen that Nature is overcharged with, and by manifestly cooling of the Body, through letting out some of the spirits (which that it doth, is most certain ) and lastly, by pre-

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\* For in some the Eruption is not visible before the fifth day, and in some very few not until after the fifth.

venting of urgent symptoms, as Hemorrhages, *Delirium*, excess of wakefulness, or over-want of sleep, &c. 3. Because Bleeding opens the Pores, and makes room for the spirits to move and operate freely, whereas before they were crowded, and oppressed; whence it hath been observed, that oft soon after Bleeding the Small-pox have broke out, and so have the Measles. What relates to Children, Bleeding is generally waved (though some Sparks, that buoy themselves upon the reputation gain'd among the Populace, by the noise of their debauched Acquaintance, are daring enough by way of experiment, to venture at it in them also) for these Reasons: 1. Because in these there is only an ebullition, an effervescency, or a simmering only of the Blood, accompanying the separation of the malign variolous matter, and therefore must be mischievous by taking off the effervescency or ebullition, and

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and consequently hindring both the separation, and expulsion of the Small-pox. 2. Considering the continual wasting of their parts, by insensible perspiration, fasting through want of appetite, and otherwise, they cannot be so subject to a Plethory, or fulness of Humors. 3. Because the least over-losing of Blood precipitates them into a faintness, and a great weakness, not easily reparable, or retrivable.

2. Now that which goads a super-eminent Physician to this height of confidence, is this thought in himself, by way of a mental questionary reasoning; What shall I be called to a Child, having the Small-pox, and shall I stand with my hands in my Pocket, and only direct a Hart's-horn Posset, a Saffron Stay, and a little Gascons Powder, and for this only can I honourably expect a reward of a Guinea Fee; or ought not my grandeur rather to act some great thing, in directing Bleeding (which

(which indeed is a great thing, and which a common Adviser dares not think of, but much rather admires the greatness of Advice) to a Child, especially the Parents being persons of Quality, who to shew themselves not timorous, or pusillanimous, do readily concur in admitting of this grand Advice, the more, because it is *à la mode de Paris*, and that it will cost them two or three Guineas; besides, because they seem to affect in themselves a capacity above the Vulgar of judging, that this must be extraordinary, and good Advice; and so by this means ten qualified Children shall be posted to their Graves, to never a one of the meaner sort (that are only tended by skilful Nurses) without the least murmuring on the part of the Friends of the Deceased, who believed all was done, that was possible to be done (and that too extreamly ill done) by the great Doctor, who without any reflection within his own thoughts  
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upon this pernicious Success, goeth on with his Bleeding on the next, and so to the next, without endeavouring to find out his error, and consequently continuing all his lifetime, to be a most notorious M — or what the sensible nearest Mourner may justly call him.

3. Before I can render the Solution plain, Whether all those that are grown up, having the Small-pox, ought to be blooded in the beginning; or many; or few; or none; it's requisite to premise these following Rules.

1. That Bleeding (and likewise Purging) draweth inwards, towards the central parts, that is, towards the Bowels, and chiefly towards the Heart, which appears by the drawing in of most eruptions upon bleeding; also by the coldness, paleness, and weakness of all the external parts; also by the faintness, and swoonings, hapning not very rarely upon bleeding; likewise by the Blood

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moving from all parts in its return of circulation to the Heart, and Bowels.

2. That the Blood which is let out by bleeding, is neither better or worse, but of the same quality of the Blood in the whole mass: Wherefore it's a vulgar error, that commonly the worst Blood is first taken away by opening of a Vein; for tho the first Porringer may differ in colour and consistency from the second, and that from the third, the cause of difference is to be imputed to the spirits (being the chief cause of the colour and consistency) that are drawn away in the first Porringer (in whose room the external Air succeeds) weakning the spirits of the Blood that is to be received in the second Porringer; so that the lesning of the spirits, and the intrusion of the external nitrous, and otherwise affected Air, causeth the variation abovesaid; for the Blood is not of the same mixture, temperament, colour, and consistency within the Vessels, as it doth appear without.

3. That

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3. That Bleeding performs its principal, speediest, and most evident effects, by diminishing, and letting out the spirits, and consequently doth immediately lessen the motion of the Blood (for as much as the spirits are the cause of its motion) and the consequence of this is, that bleeding must necessarily cool, because as motion is the cause of heat, so the lessening of that motion must occasion an abatement of heat. Likewise upon the greater or lesser proportion of the diminution of spirits, by a copious, or sparing bleeding, depends in a very great measure the condensation, incrassation, rarefaction, and attenuation of the Blood. This being the chief Rule of all others, if well apprehended in it self, and the consequences thereof, no Physician can easily mistake in what cases to bleed, what quantities, and times, and how seldom, or how oft. On the other hand, without the right understanding of that Rule, no  
man

man can act rationally, or dogmatically in bleeding, but must do it conjecturally, and empirically, that is, at random, hit or miss, sometimes killing, and other times curing.

3. One material Query I ought to propose, before I apply my self to the solution above-mention'd; *viz.* The Small-pox, being caused by the malign matter immediately and univocally, and (according to this Maxim, *Sublata causa, sc. univoca & continente tollitur effectus*) being expelled, matured, and dried away, whether the putrid Fever doth also expire with it? or whether the said putrid Fever is, or can be removed before the course of the Small-pox be wholly terminated? That there is always either an ebullition, or symptomatic putrid Fever attending the Small-pox is universally observed, and the malign matter being totally exterminated either in pustules, tumors, efflorescencies and insensible evaporations, the  
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symptomack Fever must necessarily be removed ; though it's not impossible, but that the Small-pox may seize one that doth lie sick of an essential continual putrid Fever ; or likewise that the symptomack Fever of the Small pox may sometimes, though rarely, cause an essential putrid Fever, and leave it behind, after the termination of the Small-pox.

4. As to the bleeding of adult persons in the Small-pox at the beginning ; Suppose twenty under equal circumstances sick of the said Disease, whereof ten have run the risque of bleeding in the beginning, and the other ten have not been blooded, common experience will attest to you, that two, and sometimes three, who have not suffer'd bleeding, have escaped, to one of the others that have.

5. Perhaps they will attempt baffling all men out of their common Sense, by arguing the necessity of bleed-

bleeding in the beginning, from a Plethory there is in the beginning, in all that are seized with the Small-pox; especially being attended with a putrid Fever. And secondly, because it takes off from the burden of the fulness, and of malign Matter, that Nature is overcharged with, and several other reasons spoken of above. To all which I shall answer particularly.

6. The plethory or fulness of Blood before-mentioned, is generally asserted to be of two sorts; the one *ad Vasa*, the other *ad Vires*. That *ad Vasa* is understood to be such a fulness of the Vessels with Blood, that they are ready to burst, which is a plethory many Horses are subject to by being high fed, who when put to a swift carrear, do sometimes break a Vessel within them, for prevention whereof the Farrier-doctors bleed such Horses once a Month, or oftner.

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7. The like Plethory the *Roman Athletæ*, or Wrestlers, were incident into, and therefore was then, and is still called an *Athletic Plethory*, for which they were frequently blooded; of this sort of Plethory, examples are so scarce, that among ten thousand, hardly one is to be found so improved in fulness of Blood.

8. A Plethory *ad Vires*, implies such a fulness of Blood, that is too great, or too much for Nature, that is, the Spirits to manage, and is felt to be oppressive to them; but this kind of fulness seems to be restrain'd to those, that are in a neutral state, or such who cannot be said to be well, nor very ill. These indeed appear to be huffed up in their Bowels, bloated in their Faces, and swell'd in their Limbs; and here the Indication is proper enough to bleed them to a just proportion, upon which it's usual for them to recover their strength immediately, and to return to their former Vigour; but then



then upon bleeding of them a second time, at the very instant they lose their Strength, and fall into a Disease.

9. It is presumed, you will infer, that Persons taken with the Small-pox, are in the beginning *Plethoric ad Vires*, and therefore indicate bleeding. Here comes in the universal mistake of bleeding; for if you conclude, that every sick Man hath more Blood than his Spirits can manage, and thence take your Indication for bleeding; then in all diseased Persons, and at all times, even at the hour of Death, there being more Humours or Blood than the Spirits can manage, you ought, and (as is said of you above) you do bleed, even until the fatal Minute. But is it not better to stand with your Hands in your Pockets, according to your common saying, and commit such Sick to God Almighty's Care and Providence, (who doth very oft out of his sig-

nal Mercy, and to his Glory, raise them to their former Health again) or to let them Dye, than to kill them, tho killing is no Murder in some sort of People. It is most certain, that all Men, and most especially those that are conversant about People's Lives, must give a most exact account of their Actions at the last-day, and particularly where they seem to endeavour to thwart the Providence of the Great God. I confess, that in some cases bleeding may be of use in the beginning, as where there is a very sharp Pain, or Inflammation in any of the Bowels, or a very accute Head-ach, or a fulness *ad Vires*, like unto that appropriated to a neutral state of Health described before, and some few others.

10. On the other hand, Bleed, Vomit, or Purge in the beginning, where there is is a great Oppression about the Heart or Stomach, a Vomiting, or Loosness, Faintings, great

great Difficulties of Breathing, &c. it doth all generally prove fatal; not but it happens sometimes, that some very few have been blooded, several times vomited, and purged, after the coming out of the Small-pox, and have recovered; but they were such, whom no Remedy, Medicine, or Application could kill; and therefore, because they out-lived those Male-administrations, you are not to draw a consequence, they were in the least beneficial, whereas scarce five in a hundred would have endured their pernicious efforts.

II. Neither is their plea for this sanguinary Practice excusable, upon the account they are invited to it, by the example of the Physicians of *Paris*, who Bleed three times to their once. To this must be replied, that did they in *France* direct bleeding (as commonly they do) six, seven, or eight times to their once, they would be less blameable, consider-

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ing that in *French* bodies, the Blood being very copiously engendered by their Diet, and so very much rarefied into Spirits by the extream fluid and thin Air, which as oft as Blood is taken away, enters the Vessels to supply its vacuity, and rarefies the remainder into new Spirits, insomuch, that I have known bleeding hath been administered twenty times, in little more than a Month, to bodies seemingly not very sanguine, affected with ordinary continual putrid Fevers, whereby the Blood being almost quite exhausted, the Vessels have been in a manner filled up with Air; and therefore it's no great wonder the *French* are generally term'd an airy People. But in the more *Northern* Climates, the Blood is thick, gross, fibrous, or full of flocky ragged Filaments or Strings, and not copiously perfused with Spirits; likewise the Air is gross, foggy, and thick, intermixt with heavy Vapours, and Exhalations,

Exhalations, and nothing near so fluid; so that should you Bleed a *French* man in such a Country after three or four Months abode at the rate of his own Country usage, you would instantly convert him into a Corps.

12. As to the second Reason, whereby they would enforce the necessity of bleeding, *viz.* that it subtracts from the burden of the Blood, and malign Matter, is idle, unless they pretend to lessen the Blood, without lessening the Spirits; for that quantity of abounding Blood, which they attempt to draw off by bleeding (suppose eight, ten, or twelve Ounces) being actuated, and managed by an equal proportion of Spirits, to that they leave behind flowing in the Vessels, cannot be surmised to be more burdensome to those Spirits that are tapt out with the Blood, than the Blood remaining in the Vessels to those Spirits they are perfused with.



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2. If taking off a small proportion of Blood by Phlebotomy, doth ease the remaining spirits in some measure in their burden, then certainly cutting off a Leg, or an Arm, or both the Arms, Legs, and Thighs, must ease the restant Spirits much more, and for what I know may be performed with less danger, than bleeding largely before, and three or four times after the eruption of the Small-pox.

3. Since then by bleedings they do so considerably lessen the Spirits, those that are remaining in the Vessels must be by much too weak to encounter with the Malign Matter, and consequently unable to expel it; or if administred several times after Expulsion, that is, Eruption, the Small-pox must necessarily go in again; or if by being too fast fixt in the Skin, either by hardness, or closure, or change of the Pores in their Figure, then unavoidably from a florid red they must turn (the Spirits  
in



in them, that should mature them, being vanquish'd by the malign Particles) to a green, blew, brown, and black; and so good night to you.

4. If it be pretended, that bleeding lessens the malignant matter, together with the Blood; you may easily be convinced by recalling to your memory what was formerly observed, *viz.* that all adventitious, or not adventitious malign Particles, do of their own Nature, Force, and Motion, tend to the central Parts; so that by drawing of Blood out of the Arm, or Foot, which are furthest from the Center, there can not the least atom of malignity thence be fetcht away with the Blood.

5. The malignant matter naturally drawing in, and bleeding likewise drawing in, this must necessarily hurry away the Patient to his long home.

6. Was it ever known, that any Physick-man did direct bleeding to

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let out the malignity in the Plague, or of any Poyson that was swallowed down, at the extremity of the Veins; and much less can be expected from it, in letting out the venomous matter of the Small-pox?

7. A necessity of bleeding may be urged by them, in case the Patient fetches his breath too thick and short, or panting, that he seemeth to be in danger of a sudden suffocation, or stifling. This certainly is grounded on a false supposition, that the Blood stagnates through fulness in the Lungs; whereas the Stagnation cannot be caused by fulness, in a Person who possibly hath already been blooded several times to a great quantity, and taken no nourishment for six or eight days, but is occasioned by the malignant matter, that hath not only dampt, but mortified the Spirits that should move the Blood, and therefore must necessarily stagnate. But that which addeth greatly to the  
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the Madness, and killing Error of bleeding in the foresaid case, which doth beyond all contradiction draw in, is that at the same time they are giving strong *Sudorificks* (which in their Physick Cant they call *Cordials*) to expel and throw out the malignant matter. This is at one and the same instant of time, to thrust from you, and to pull to you, which certainly is the most unanswerable and inexcusable Error that can be committed by the worst of *Mountebanks*.

8. This symptom of panting is very frequent in the plague, or pestilential Fever; and did ever any pretender to Physick conclude the said symptom to be occasioned by a fullness of Blood in the Lungs? and consequently was ever any man so mad, as to direct bleeding in that case, or in any Fever that is barely called Malignant? the cause of panting in the plague, and malignant Fevers, being

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being the same in the Small-pox, why should one dare to bleed in the one, and not in the other?

9. If bleeding once, and that to a small proportion, is so suspected a remedy in the beginning before the Small-pox are come out, of what ill consequence must two, three, or four bleedings be after they are come out?

10. It hath been observed above, that the Small-pox are sometimes accompanied with tumours, filled with the same malignant matter, and appearing sometimes about the Face, Neck, and Arm-pits, and other times about the Belly, Groin, or Legs; now that such sort of tumors should be endeavoured to be withdrawn, removed, or abated by bleeding the next Vein to them, under or above them, and so to evacuate by way of Derivation (not by revulsion, which must be performed in a Vein at a greater distance, either of those scopes or intentions being very idle)

idle) the malign matter contain'd in them is a madness, whereas instead of their designed purpose, they cause the said matter to draw in, and sink into the Veins again, whereby the malignity in the Body is so increased (were it only by the matter of a simple tumour being Phegmonick, Ædematous, Erysipelous, or other) that the Fever is commonly exasperated by so doing, into an high burning, or a malignant Fever of the highest degree; this must necessarily be interpreted a folly, exceeding the imagination of all mankind.

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## C H A P. XVIII.

*Of Purging in the Small-Pox.*

I. **W**HAT relates to Purging, either before, or after the eruption of the Small-pox, by reason of its drawing in all Humors, together with the malignity to the central parts, it hath universally been adjudged, and by common experience found to be equally pernicious in this Distemper, as in the Plague, a laxative and not purging Clyster being scarce admitted, unless in the beginning in a great costiveness and fulness of Excrements in the Guts; though I do well remember, that some years past a certain red Antimonial Powder, which was perversly judg'd sudorifick, was given to a young Gentleman in *Shandois-street*, by a *Charter-house* Physician deceased, after the full eruption of the Small-pox, which moved ten  
or



or a dozen large thin Stools, being all Humours, and little of gross Excrements, and suddenly drew in all the Small-pox, insomuch that all about him despaired of his life, though afterwards youth and strength, with the assistance of large doses of Spirits of Harts-horn, struck all out again, so that the party recovered to the surprize of every one about him. This instance is brought in here, not only to prove the extremity of danger through purging in the Small-pox, but to offer this remark, That those imaginary secret preparations of Sudorific Antimony, whether white, red, blew, or black, (in all which I do pretend to be sufficiently skilful) do now and then turn in some Bodies to smart Purgers, and sometimes Vomitories, and therefore ought to be carefully chosen, if not wholly avoided in cases of this hazard, where the event shall depend upon the good or ill fortune of that Medicine.

C H A P. XIX.

*Of Urgent Symptoms in the Small-pox;  
and particularly of Hæmorrhages.*

I. **T**H E next step I am to make, is to the Urgent Symptoms, among which I will begin with the worst of them, and that is a Hæmorrhage, be it where it will. Here I find Physicians more than ordinary cautious; for though in all cases, this only excepted, they never shew the least scruple in bleeding for revulsion, as they call it; yet here they universally fly from it, and betake themselves to put their hands in their Pockets, being contented to be lookers on, and to be Infallible Judges, in pronouncing of their Sentence of Death, without considering, that even this Symptom sometimes is curable by an indication taken from its true cause, which is not fulness, or a simple  
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thinness or sharpness of the Blood, but the malign matter being turn'd in, and immersed into the Blood (by previous Bleedings, strong Cordials, or Alexipharmacks overloaded with spirit of Wine, or by frequent exhibitions of large Doses of Narcotics, or by Purges, and purging Clysters, or by external Errors, or lastly, by the too great proportion of malignant matter (overballancing the force of the spirits in separation and expulsion) through its corrosive acuteness (as it were) cutting the fibres of the Blood, and running it into an *oleum per deliquium*.) So that in this case, tho thickning or adstringent Medicines internal and external, seem to be proper *indicata*, yet the malignity, being by them bound in, and the spirits tied up from separation and expulsion of the malign matter, doth plainly counter-indicate the use of the said Medicines, and above all bleeding; notwithstanding there are several Medicines

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Medicines I know of, that do, and have successfully answered this whole indication, without any counter-indication whatsoever.

2. The same Reason now spoken of of being equally valid against the use such Medicines that stop Vomitings and Loosenesses; I shall pass by making any further discourse of them.

C H A P. XX.

*Of want of rest and sleep in the Small-pox; and of Hypnoticks, chiefly of Opium, and Diacodium.*

1. **W**ANT of sleep, or over-wakefulness, is another urgent Symptom, which most Practicers hold so important, that they seem to take their chief indication from it, killing in good earnest two Birds with one stone, by pretending through the *indicata*, which this Symptom points to, *viz.* Hypnoticks or Lullaby Medicines, not only to give rest to the Spirits, but that being so at rest, and disengaged from their over-furious combat with the malignant matter, they become more powerful in throwing out the said malignant or variolous matter, whereunto they are the more spurred on by the common saying, namely, *Narcotica omnes evacuationes*  
*sup-*

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*Supprimunt præter sudorem*, i. e. Narcoticks, or dosing sleeping numbing Medicines do suppress or stop all evacuations, excepting Sweat, which is that they chiefly aim at, making this inference, That if they provoke sweat, they must necessarily throw out the Small-pox; besides that great and chief benefit, there is an advantage Narcoticks have over all other Medicines, that through their virtue of stopping all Evacuations, they must prevent all Vomitings, Loosenesses, and Hæmorrhages, which are the Symptoms that are so much dreaded in this Distemper. These being such inviting Faculties, have so endeared *Diacodium*, *Opium*, and all such Medicines that are formed out of this latter, as *Laudanum opiatum*, *Laudanum liquidum*, *Nepenthes*, *pil. de cynoglos.* *de styrace*, *Requies Nicholai*, and a hundred more, to Physicians, that they are grown most desperately fond of 'em to a madness; and happy doth that Physician think himself,



himself, that hath a secret Preparation of his own (though never so idle a one) which another hath not, and would sooner trust his Wife or Daughter with another, than his darling *Opium* Preparation, and on which he bestows as fond and doating a name, calling it *Pilula pacifica*, *Paregorica*, *Cælestis*, *Divina*, *Pantheon*, and what not? Whenever Mr. Doctor is to storm some great Distemper, *Diacodium* and *Laudanum* are advanced by him, as most trusty and faithful, to do the work. To him that is like to be choakt by a Catarh, or skowr'd out of the world by a desperate Looseness, he doth infallibly recommend one of his Lullabies: And in the Small-pox or Measles, *Diacodium* is his *Panaca*, and Anchor of Health, beginning the first day with an ounce, the second ascending to two, the third to three, and the fourth day to four, and there he sticks, continuing that Dose for several days following more  
Sid---no

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*Sid---no*, until he perceives trembling of the Hands, a panting Breath, mumbling Speech, and the rest of the Heralds of Death. Dr. *Prate-all* puts on *Diacodium* in the Small-pox a singular value, highly raised in him by an hereditary notion from his Father *Sidn*—— the truth of which the pale and gasty events in his Man *G——l*, little Doctor *Rusf.* and abundance more might very justly have render'd suspected to him. The like success attending the Administrations of other Physicians ought to rouse up the rest of the Lullaby Doctors to a reflecting thought.

2. Wherefore it will be very important to examine to the bottom the operation (and manner of it) of Hypnoticks; in order to which let us first consider the occasion of sleep, which happens, whenever the animal Spirits are reduced to be so few, or lessened, and dispersed by daily labour and toil, that they are become insufficient to keep up, and to strain  
the

the Nerves into a stiffness; and then they must necessarily subside, and the Spirits become less active, and slow in their motion, and so the animal Operations ceasing, or rather lessening in their source, or original fountain or spring in the Brain, sleep follows, which lasts so long, until during the sleep a new and sufficient supply of animal Spirits is engendred out of the Arterial Blood, which now being capable enough to strain the Nerves of Sense and Local Motion, one is awakened, and roused up.

3. So that here are two Conditions requisite to occasion sleep; the one is the scarcity and lessening of the animal Spirits; the other is the subsiding of the Nerves in their source and elsewhere. It must necessarily follow, what ever lessens the animal Spirits, either by dispersing, or wasting of them, or by destroying of them, or by drawing of them from their source, must cause sleep; and thence it is, that labour,  
and

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and wakefulness of all the day, do occasion sleep; Bleeding doth the like very oft, by withdrawing such a proportion of Blood and Spirits, whereout afterwards so many animal Spirits should have been engendered in the Brain. A plentiful Meal causeth sleep by drawing too great a quantity of animal Spirits from their source to the Stomach, and circumjacent Bowels.

4. In relation to the subsiding of the Nerves, you are to apprehend, they are perfused with a glutinous slimy Juice, whereby upon a partial emptiness of Spirits, their little Pores subsiding are apt moderately and softly to cleave together; and so lock in the animal Spirits, and then it may properly enough, from the suddenness of it, be said, one falls or drops into sleep. Now whatever doth cause an excess in quantity of the said glutinous slimy Juice, must also be said to cause an excess of sleep. 2<sup>dly</sup>, Whenever it happens, that the said  
glutinous

glutinous Juice is rarefied by the too much violence of motion of the animal Spirits, being but few in number, then a drowfiness must follow, because such sort of rarefaction doth somewhat hinder the cleaving together of the subsiding Pores of the Nerves, and seems to huff 'em up a little, so that the animal Spirits are in that case only dull'd or damp't in their motion, or a little detained, and not lockt up, as they are in sleep. Whenever a man hath overtired himself by work or travel, he can only be drowfie, and not sleep fast, because he hath by such too long continuance, or violence of labour, and action, consumed, or dried up too much of the said slimy or glutinous Juice of the Nerves, or through the heat of his animal Spirits in this over-labour hath rarefied it. I will pass by the trouble of explaining the causes of drowfiness, and deep sleeps that happen to some, and over-wakefulness to others, that are de-

H                      bauch'd



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bauch'd with Wine, Brandy, or any other strong Liquors, since it's plain and easie for any of sense to apply the preceding *Hypothesis*.

5. This premised Discourse being only introductory to the illustrating the effects, and the manner of agency of *Opium*, opiated Medicines, and *Diacodium*, as the chief of Hypnoticks; that which is next requisite, is to make the application thereof. Their faculties of dosing, throwing into a deep sleep, and stupefying the sense of feeling, so as to make interception or suspension of pain, whereby *Hypnoticks* do acquire the name of *Anodynes*, *Pacificks*, and *Paregoricks*, are generally asserted to derive from a Narcotick Sulphur, condensing the Spirits, and fixing the Humors of any part of the Body. Admire a little the absurdity of this Physick Cant. They tell you, The said Faculties flow from the oily and inflammable part of the *Opium*, that condenseth the Spirits, and fixes Hu-

ors:



mors : Is it philosophical to say, because a thing is oily or inflammable, or through its oiliness and inflammability it condenseth the Spirits, that is to say, *Opium* in the quantity of one Grain, half a Grain, or a quarter of a Grain, doth make all the Spirits oily, and inflames them, and by so being rendered oily and inflamed, they are condensed ; by being condensed, they are stupefied ; and by being stupefied, all pains for that time are removed, and the Humors fixed, that is hardened, so as to be wholly not *fluid* ? Were it not more pardonable, to say *Opium* doth perform its effects through occult qualities ? As Fire, by being condensed in its particles, burns more furiously ; so the Spirits, by being condensed and contracted more close together, must necessarily act more vigorously, and consequently occasion wakefulness ; and through greater activity, and quicker motion, render humors much more fluid, and increase pains. Possibly

what they mean by condensing, is to be understood thus; *viz.* *Opium* by raising in the Body damp and vapours, that crowding between the Spirits, place themselves in the little spaces between them, and consequently may be said to condense, or incrassate them. But to the contrary, this is a rarefaction, and a thinning of the spirits, and humors. There is also another parcel of Physicians, who imagine *Opium* to be of so extreme a cold nature (that is, as they term it, in the fourth degree) that it congeals, or friezeth the spirits into a numbness, and humors into a hardness. These exceed the others in extravagancy of Opinion, insomuch, that generally speaking, it may be said, Physicians are very Irrational Animals, to which the Proverb seems to allude; *A man is a Physician, or a Fool*; meaning all Physicians are Fools, tho with this exception, that there are some in most Countries, who are of as good sense

sense and extraordinary parts, as any of other Faculties.

6. Many convincing Reasons may be offer'd, to admit *Opium* into the list of whole Poisons, when taken in a large Dose, in regard it doth as certainly kill as any other, by destroying the mixture, composition, and temperament of the heart, brain, and spirits, through its most piercing, acute, and cutting particles, or most subtil spirits, that (as most others) are contained, and lockt up in a sulphurous body; so that the sulphurous body of *Opium* through it self is no more narcotick, than the body of Brimstone is corroding; nevertheless in the unctuous body of Brimstone is contained the corrosive spirit of Sulphur, as likewise in the unctuous body of *Opium* is the poisonous narcotick spirit, and it is more easie intirely, or to what degree you please to separate this narcotick spirit from the *Opium*, than the corrosive spirit from the other, and that in less than

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an hours time, which done, a whole Ounce of it shall contain less of the narcotick spirit, than the hundredth part of a Grain of *Opium*, and may be more safely taken; which is a clear evidence, that it performs its narcotick effect only by its spirit, and not in the least by any sulphurous condensing steams; for what proportion of sulphurous steams can arise from half a Grain of crude *Opium*, sufficient to stupefy the Brain, and condense or thicken all the animal spirits of the Body? It is most absurd, and idle to imagine it.

7. For the most part poisonous spirits are lockt up in unctuous sulphurous bodies, which being less porous or pervious, and more clammy and glutinous than others, are best fitted or adapted to contain the said most subtil piercing spirits: For did you suppose them to be containable in other bodies, that are not sulphurous or unctuous, it were impossible such subtil spirits should be contained  
in

in them longer than a few weeks, months, or a year or two; whereas being lodged in unctuous bodies, they scarce lose any part of their virtue, that is, the poisonous spirits are but a little diminisht in fifty or a hundred years.

8. Since then it is beyond all peradventure, that *Opium* is a sulphurous Body, and the venom in it is a most subtil acute spirit, they are much in the wrong, that pretend to correct that venom by obtusing the points of its particles by Vinegar, juice of Quinces, spirit of Sulphur *p. c.* of vitriol, of Salt, or any other acid; for besides that these are unfitted or incapable of entring any sulphurous body, yet could you suppose they did, they would rather acuate, than blunt the points of those narcotic spirits. 2. They are little less deceived, that pretend by a dissolution of *Opium* in Sack, or spirit of Wine to correct it, for by that means they can effect no more, than

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depurate the *Opium* from some heterogeneous admixtures, and not in the least soften the venom. 3. The best preparation or correction of *Opium* is certainly dissolving it in a tincture of blue Salt of Tartar, digesting it for some days in a Sand-bath, and then either evaporating it to a mass (which must prove extremely brittle, though easily corrected by adding some sort of Gum, or Balsam to it) or keeping it in a liquid form. 4. The additions of Castor, the extract of Saffran, of those hot Roots and Spices in the tincture of the *species Diambrae*, likewise of Musc and Ambargryse twice over, with intention to correct the extreme coldness of *Opium* (which without all dispute is hot) in the preparation of *Laudanum opiatum*, savour of much ignorance and folly, and far more if the idle Doctrine of *Directives* should prove true; for by those sob Cordials, and Cephalicks, the poison of *Opium*, yet untamed  
and



and uncorrected, is directed, and conducted to the Heart, and Brain; but that their madness should be continued in all those variations of *Opium* in *Philonium Mag. Roman. Persic. Pil. de cynoglos. de styrace*, and especially in *Nepenthes opiatum*, wherein over and above all the rest, there is an addition of the Salts of Pearl and Coral to no purpose, is very surprizing. Now the *Laudanum liquidum* prepared, and truly corrected by the tincture of blue Salt of tartar, or by another that's much better, which I could tell you, exceeding all those now mentioned by a million of degrees, ought to be solely substituted in their stead, and all other foolish compositions of that kind intirely rejected.

9. *Opium* being administered in a just and very moderate Dose, is in the Chapter of Poisons accounted only for a Demi-poison, that is, it doth not kill, but acts half the part of poison, by weakning all the Bowels

and Spirits, namely the natural, vital, and most particularly the animal spirits, which through its most subtil, cutting, and acute particles it doth destroy, by separating their mixture or composition; for though the spirits are constituent parts of a more compound body, to wit, the juices, and all the parts of the Body, yet in themselves they are a lesser compound. The animal spirits being in such a proportion lessened, and extinguish'd or destroy'd, as through their paucity, or small number, to occasion, or suffer a subsiding of the Nerves at their source, and in all the other parts of sense and motion, sleep according to the above-mentioned *Hypothesis* must necessarily follow. And forasmuch as many, if not most, upon the taking of an *Hypnotick*, or opiat Medicine (of which kind, (though in a milder degree, all do assent *Diacodium* to be) do not sleep fast, but are only impelled into a slumber (which is an imper-

perfect sleep) and sometimes only into a drowsiness, accompanied with continued dreams, and now and then with senseless talking, as if they were in a *Delirium*; all this is to be imputed to the said subtil venenous opiat spirits, rarefying the glutinous slimy nervous Juice (heretofore discoursed of) that they do in some small measure expand, or lift up the subsiding Nerves, whereby the animal spirits not being sufficiently lockt in, are apt to continue in a small motion, and exercise their function, though in a very imperfect, and confused manner.

10. That *Opium* doth weaken all the Bowels, needs no other testimony, but those that have frequently taken it, having lost their Appetite and Digestion, looking pale and ghastly, being render'd extremely feeble in their Joints, and all their Senses, both internal and external, viz. their Memory and Understanding much impaired, their Sight dim,  
Cc.

11. In

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11. In Pains, Inflammations and Fevers, *Opium* doth the office of Bleeding; for as the latter performs what it is designed for, by lessening the Spirits chiefly, though together with the Blood; so the former by lessening the Spirits doth suspend Pains, in the manner as you have been told, and must necessarily, by abating the Spirits both animal and vital, put a stop to inflammations.

12. It is not to be doubted, but *Opium*, though *per accidens*, by subtracting or destroying the animal and vital Spirits, doth cool beyond all Medicines, in regard that violent motion being the cause of preternatural heat, and the Spirits being subtracted, the motion of the remaining Spirits must be lessened in proportion to the foresaid subtraction. But *Opium*, in respect of its bitter and inflammable sulphurous parts, must be accounted hot. From what hath been explain'd here, it plainly appears, how far the Ancients were  
in

in the right in their observing, most, if not all Hypnoticks, and Narcoticks to be extremely cooling, tho as to the true cause thereof, they were wholly in a mistake, and all others after them.

13. There is only this difference between the taking of an Opiat and Bleeding, that the latter lessens the spirits, together with their proportion of Humors and Juices, and the former doth diminish the spirits only, leaving that proportion of humors, which they did actuate, as a load to the remaining spirits, which possibly are insufficient to manage those humors they are perfused in.

14. That Opiates do thicken, or condensate Rheums and Catarrhs, happens likewise by extinguishing of the Spirits, that through their too brisk motion attenuate and rarefy. Here it may be remark'd, of how dangerous consequence an Hypnotick may, and hath oft proved fatal to Asthmatics, by thickning the humors

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humors in their Lungs, which stagnating by too great an incrassation, must necessarily suddenly choak and stifle the Patient.

15. In conclusion, by this *Hypothesis* you may easily resolve all doubts concerning Hypnoticks, and be exactly guided, when, how oft, to whom, and in what cases to exhibit them, and without it it's impossible for any man to prescribe it safely, but must more oft kill than cure.

16. There is one material point remaining to be discussed, which is an accidental property in Opiats of sometimes promoting sweat, hapning through the violent combat, strugglings and motion between the poisonous particles and the spirits, the latter endeavouring by a furious sally to throw out the former through the pores with the *serum*, attenuated and actuated by the violence of their motion: What concerns their manner of stopping all other evacuations,  
it's



it's no-wise difficult to explain by what hath been proposed already.

17. The application of the premised Discourse will soon inform you, how pernicious, and indeed killing the continued exhibition of Opiats must prove in the Small-pox, and Measles, thereby impoverishing the spirits to that degree, that it's impossible for them to make a proportional resistance against the malign particles of the Small-pox, pressing towards the central parts; and much less are they capable of driving them out to the Skin, or circumference of the Body.

17. Nevertheless, Hypnoticks may be so managed, both in this Distemper, and in many others, that being seasonably, and with the greatest caution imaginable advised, they are capable of saving many a man's life, and relieving them in the worst of miseries.

C H A P. XXI.

*Of the chief indication in the Small-pox, and of the Remedies and Medicines answering to the said indication.*

1. **T**HE first and chief indication in the Small-pox is taken from the malignant or venomous matter, which indicates, or sheweth, that it must be first separated from the sound parts of the Blood; and secondly, being separated indicates expulsion, or driving out.

2. The separation being performed by the ebullition of the blood, which in Children generally proves easie enough, and forward, their blood not being gross, or much glutinous, and their spirits lively, is therefore apt enough to boil up; so that unless there should happen some extraordinary ill symptom, I would advise all people to avoid sending for a Physician, lest the reflection of his Honour striking upon his Fancy, should

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should urge him not to stand with his hands in his Pocket, and act some mischievous thing or other, on purpose to deserve his Fee. The only safe way is to leave it to Nature, rather than trust to a foolish idle Physician.

3. In case the ebullition should be too slow, or scarce rise at all, and the Child complain of an extream Headach, great oppression at his heart and stomach, and scarce any warmth, that is not so much as usual in the time of health, to be perceived in feeling his Forehead, or Wrist, the colour of the Face not high, and the Pulse slower than ordinary, then this Drink will be a great relief.

4. *Take of Chamomile Flowers, and Elder Flowers, of each half a handful\*, boil them in Posset, made with Smallbeer very little hopt, to a pint, and strain it.*

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\* Otherwise called a Pugil, whereby Flowers are measured; being as much as you can take up between your Thumb and two next Fingers,

5. Here

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5. Hereof let him take a draught warm'd, greater or lesser, according to his Age, three or four times a day, especially at night, before the usual time of rest. Instead hereof many will use a Drink of a few Figs, boil'd in Small-beer, and strain'd: But by the way, you are to take notice, that for the most part the ebullition is too high, as appears by the extraordinary heat, violent pain in the Back, high colour in the Cheeks, beating of the Temples, &c. then to bring it to a moderation, this following Drink will perform the work very well.

6. *Take of Spanish Scorzonera roots cut small, of burnt Harts-horn grossly powder'd or bruised, of each two ounces; boil them in two quarts of spring water, to one quart; about a quarter of an hour before the drink is taken off the fire, put to it half an ounce of English liquorish cut small, strain it; or instead*

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*instead of the liquorish, the drink*  
*may be sweetned, for the taste*  
*sake, with white sugar-candy, or*  
*penide sugar. This may be drunk*  
*instead of Beer warm'd, or three or*  
*four draughts taken warm in a day.*

7. Before I proceed further, it's necessary to make this Remark, being of the greatest importance of any, that are relating to the Cure of the Small-pox, viz. It is only a gentle and moderate ebullition of the Humors, that causeth a separation of the malign matter from the sound, whereas an high, violent, and sharp ebullition, doth confuse, entangle, and embroil the malign matter much more, and as long as the ebullition continueth in that degree of violence, it's impossible the malign matter can be separated, and consequently expelled.

8. Hence the ignorance and killing Errors of most Physick-men appear, who without considering the .

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the cause, or mistaking the cause and reason, why the Small-pox are not readily expelled, immediately advise strong drivers out, which not performing what is expected from them, and falsely judging that it happens because they are not strong enough, they proceed from prescribing a third or fourth part of Epidemic or Plague-water, mixt with two thirds, or three fourths of simple cordial Waters (as they call 'em) to half or two thirds, or more of the Epidemic, in proportion to half or one third of the simple cordial Waters, whereby the malignant matter is still more and more confused, and embroil'd with the sound Humors\*; so that either the malignant Particles descending deeper to the central parts, are not expelled at all, or some part which

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\* Likewise inforcing these with great numbers of those fiery burning drops of spirits of Harts-horn, and other inflaming pernicious Compounds, as you will read in the following page.

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happened by great violence to be expelled to the skin in the Small-pox, turns green, blue, brown or black, and then they throw it upon the malignity of the distemper, which, in good truth, ought to be imputed to the error and ignorance of the Prescriber. But much greater is the mistake, when the spirit or tincture of Saffran is added to the proportion abovementioned, also *London or Venice Treacle*, *Mithridate*, *Diascordium*, or *Spirit of Harts-horn*; Since then, as is insinuated before, the ebullition in the Small-pox is commonly too high, it ought rather to be reduced to a moderation, wherein besides what is set down before, most testaceous Powders are of singular vertue; as *Simples*, *Crabs Eyes*, *Pearl*, *Coral*, *Bezoar Stone*, &c.

*Bezoar Mineral* will do very well, if exactly prepared, and fresh, and meets with a constitution, that doth not open the body of it too much. Compounds, *Pulvis è chelis can-*  
*crorum*

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*crorum compositus*, (which is the best of 'em.) *Pulvis granorum chermes comp.* (leaving out the *Cloves* and *Leaf-gold*.) *Pulvis cardiacus magistr.* (without the *Citron-peel*, *Angelica*, *Zedoari*, *Ambargryse*, and *Leaf-gold*.) *Species de Hyacint.* Any of these either singly or compounded, may be given to Children from two Scruples to four, in 24 hours; that is, the fourth part every six hours; to wit, 10, 15, or 20 grains, according to their age, every sixth hour in a spoonful or two of some convenient Vehicle; in persons grown up, they may be taken from four Scruples to eight, or ten, or more, in a day and night; that is, every six hours from one Scruple to two, or two and an half. The *Pulv. Bez. mag.* must be exhibited in a less proportion, because of the *philonum magistrale*. The Simples may be put together in this manner:

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9. R. Ocul. cancr. pr. ℥ij. marg. pr. ℥j.  
coral. rubr. pr. ℥℥. lap. Bez. or.  
gr. xv. m. f. Pulv. Sumat à ℥℥.  
ad ℥j. in infantibus & pueris, sexta  
quaque hora, & à ℥j. ad ℥ij. & ℥ij℥.  
in adultis iisdem horis in vehiculo  
idoneo, sc. sequente vel simili.

10. R. Aq. lact. Alex. ℥vj. Aq. Ci-  
nam. hordeat ℥j. ocul. canr. pr. ℥j.  
vel marg. pr. ℥j. sacchar. crystallin.  
vel sacchar. penid. q. s. ad gratum  
saporem.

M. f. Jul.

Capiat. cochl. iij. iiij. vel v. in lang.  
vel altern. aut tertia quaque hora.  
In stead of the Aq. lact. may be  
substituted Aq. meliss. buglos. borr.  
&c. and in the room of Aq. ci-  
nam. may be used Aq. scord. comp.

11. Though by how much the  
less a Prescription is compounded,  
the more it ought to be esteemed,  
because you may easier know, which  
of the Components or Ingredients  
performs

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performs the work, and you may more exactly and readily answer the Indication or Scope you aim at ; yet in regard the jumbling of Compositions seems to magnify the Art, and to raise an esteem of the Artist in the opinion of the Patient and Apothecary, who not only finds his account in it, but is thought by the Physician to be detained in greater subjection and ignorance by such his mysterious confounding of Medicines, the Composites may, without any hazard or trouble, be thrown together thus :

12. *R. Pulv. è chel. cancr. compos. granor. Cherm. comp. an. ʒj. pulv. Bez. magistr. ʒʒ. corn. cerv. ust. vel nov. pr. ʒj. lap. Bez. or. ʒʒ. M. f. Pulv. Dividatur in singulos Dos vel duos Dos separatim in chartulas reponendos, & sumat unam sex-ta quavis hora in cochl. j. vel ij. Jul. supra. script. superbib. ejusdem Jul. cochl. iij. vel iiij.*

13. An

13. An Hypnotic, where the ebullition riseth too high, (if any where, or at any time it be useful ) doth sometimes prove a singular help to abate it, and reduce it to a moderation ; and therefore a *Bolus* made out of those Powders, *Diascordium*, and *Conserve of buglos*, or *borrage flowers*, or of *succory flowers*, inforced with a few drops of *laudanum liquidum tartarifatum* ; or by prescribing a small draught to wash down the *bolus*, consisting of *aq. paralyf. ulmar. papav. Rh.an. ℥j. aq. scord.comp. ℥℔. syr. de mecon. ℥ij. iij. vel iiij.* more or less, according to the age, and other circumstances : But you are to observe, that an Hypnotic is never to be used, where the Ebullition is too slow ; and but seldom, where it is too high. Two Particulars are chiefly to be observed in an Ebullition of the Blood in the Small-pox , in respect of the Causes of it *viz.* the disposition of the subject or matter that is to boil up, and the  
I efficient

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efficient cause that excites the boiling up. In the former the Humours must be less glutinous, cleaving, tenacious, or tough; but still there must be some glutinosity or tenaciousness remaining, to congregate the subtil Particles that cause the Ebullition, or otherwise they would evaporate through the pores of the matter without causing any Ebullition, which appears in spring water, that is nothing near so apt to boil up on the fire as milk, to which the glutinosity that is in it by reason of its creamy and cheesy parts, and the forming of the skin atop of it, contributes a disposition and a greater aptness to boil up, than there is in water. On the other hand, if the matter be too glutinous and tough, it will only be disposed to rise up into some few great bubbles, or scarce any at all, as is evident in a thick syrup, therebinthin, or any other thick, glutinous matter, that's set on the fire. However, where the matter is thick,  
and



and very glutinous, if the subtil particles that are to cause the Ebullition, be very numerous, or in a very large proportion sufficient to break through, and disunite the thick tough matter, this must cause an exceeding high and violent Ebullition; whence it is, that the Ebullition is much higher in persons that are grown up, than in children. The efficient cause of the Ebullition in the Small-pox being already discours'd of above, I shall pass it by in this place.

14. Since then the Blood is much more apt to be impelled into too high an ebullition in Children, and a too strong and impetuous ebullition in those that are grown up, having premised that short Theory in the next preceding Paragraph, it will not be amiss to set down the Simples, that have a vertue to allay or contemperate the said exorbitant Ebullitions, by smoothing of the Blood, which in Children ought to be such, as are

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mucilaginous, and somewhat glutinous, viz. *Gum Lacca, Bdellium, Gum Arabic, Tragacantha, Harts-horn shavings, Mashmallow roots, Spanish Scorzenera roots, China roots, Fœnugrek and linseeds, &c.* these may be compounded variously, but still adding a small proportion of some expelling Ingredient, to hinder the malign particles from intruding to the central parts.

℞. *Rasur. corn. cerv. ʒjß. Ras. eboris ʒiij. Rad. Scorzoner. hisp. ʒij. Rad. Vincetox. ʒß. coq. in Aq. font. ℥jiii. ad medietatem. colatura edulcetur saccharo althææ, vel penidio M. f. Apoz.*

*Bibat sæpius per diem tepidè.*

For a Child under four years you need to order but a Pint of the said Decoction at a time, on purpose of having it fresh and fresh.

Or thus :

15. ℞. *Rad. Alth. ʒvj. glycyr. angl. ʒß. gum. lac. ʒij. gum. Bdell. ʒj. coq. in aq. font. q. s. ad ℥jß. m. f. Apoz. utatur*

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*utatur haustu ter vel quater per diem.*

The best, in my judgment, is the following Decoction.

16. *R. Rad. chin. in taleol. sect. ʒ℥.*

*Ras. corn. cerv. ʒvj. Rad. Scorzon.*

*Hisp. ʒij. caricar. ping. Par. ij.*

*vel iij. coq. in Aq. font. ℥iij. ad medietat. coletur. utatur modo ante dicto.*

17. The *China roots* will serve for a second boiling; and the said Drink may be as useful to those that are grown up, as to Children; and in case the former should be affected with a putrid Fever in their Small-pox, I cannot tell what you can better prescribe to them for their ordinary Drink, than the same Decoction, with the addition of one ounce of burnt harts-horn, leaving the figs, and substituting either liquorish, or some other ingredient to make it palatable.

18. What hath been hitherto offered, is in relation to keep, or re-

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duce the Humors to a moderate Ebullition, whereby nature may make the more easy separation of the venomous Matter, which if expelled as easily, and mildly, and in a daily due proportion of Pimples, that appear well qualified as to number, colour, softness, &c. I would not advise any body to give the least thing, besides what hath been proposed already, but leave it wholly to nature; and be only observers, that care be taken, the Patient catches no cold, or is not sulterd with too many Bed-cloaths, or too great a fire in the Room, or eats any thing besides Water-gruel, Sugar-sops made with Small-beer that is very little hopt, or the like, and in moderate quantity; and particularly to observe, whether the expulsion is continued within the regular order of Nature: Of which I shall offer more hereafter.

19. Here comes in the general mistake of Physick Doctors, and many

many others, who no sooner see the appearance of half a score Pimples, but yawl out for a Saffron-stay, more Coverlids, a bigger Fire, and with all speed for Pen, Ink, and Paper; designing, with a countenance as grim as a Hedg-hog, to mark down some strong Cordial to assist Nature potently, to drive out the Small-pox.

20. The common drivers out are these; viz. Most Alexipharmacks and Sudorificks, as Roots *Angelica*, *Fenil*, *Tormentil*, *Pentaphyl*. Garden *Valerian*, *Dictamnium*, *Devilsbit*, *Carlina*, *contrajerva*, *Virginian Snake-weed*, &c. Herbs, *Carduus Ben*. *Scabious*, *Maiden-hair*, *Goats-rue*, *Water-germander*. Flowers, *Chamomil*, *Elder*, *St. John's wort*, *Marigold* and *Saffron*. Seeds, *Millet*, *Carduus*. *Antimonium Diaphoreticum*, *Bezoar-ticum Minerale*, item *Solare*, and *Aurum Diaphoreticum*. The Compounds are *Treacle water*, *Epidemic water*, *Aqua Scordij composita*, *Aqua Protheriaca-*

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*lis, Aqua Bezoartica, Aqua Petasitidis composita, Aqua Angelica composita, Theriaca Londinensis, Theriaca Andromachi, Mithridatium, Diascordium, Lapis contrajervæ* ; and lastly, the greatest and most dangerous Cheat of them all is the *Goa Stone*. Besides these, there are those that are call'd Expulsors or Outdrivers, which are specific only in the Small-pox, some of them being used anciently by the *Arabs*, and continued down to this day, as *dried Figs, Lentils, Fenil Seeds*, and by others since (though in colder Countries only) *Garden-cress Seeds, Turnip, Navet and Columbine Seeds*.

21. The most famed Compound out of these, is that set together by *Avicen*, by others of the *Arab* Physicians highly commended, and frequently used by the Moderns with great success in those, that would have recovered without it, and with none at all in as many, as have died after the use of it.

*R. Cari-*



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℞. *Caricar. ping.* (large dried Figs)  $\mathfrak{zviij}$ . *lent. excoct.* (lentils peel'd)  $\mathfrak{ziiij}$ . *gum. lac.*  $\mathfrak{zij}$ . *g. traga.* (gum dragant) *sem. fœnic. d.* (sweet fenil seeds) *ana* (of each)  $\mathfrak{zij}$ . *coq.* (let these be boil'd in *aq. font.* (spring water)  $\mathfrak{lbjss}$ . *ad.* (to)  $\mathfrak{lbss}$ . hereof let two or three Spoonfuls be given at a time. *Rhasis* adds to it *croci* (*saffran*) *gr. xv passul.* (*corinths*)  $\mathfrak{zv}$ .

22. The most celebrated Composition of the Moderns, is that of *Francis Joel*, which he affirms to be his own singular expulsive Powder, and never gave it but with happy success, for the expelling of Small-pox and Measles that were hidden, and would not come out.

℞ (Take) *sem. nasturt.* *Aquileg.* (of Garden cress and Columbine seed) *ana* (of each)  $\mathfrak{zi}$ . (one Dram) *scob. unicorn.* (unicorn raspt, or filed) *aut loco ejus scob. corn. cervu.* *in Septemb. capt.* (or instead thereof harts-horn taken in September

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raspt or filed ) ʒ℥ ( half a Dram )  
*coral. rub. pr. marg. pr.* ( of red coral  
 and pearl prepared, that is grinded  
 into most subtil powder, on a mar-  
 ble or porphir grinding Stone, and  
 in the grinding pouring to it now  
 and then two or three drops of Rose-  
 water, to make it grind finer and  
 smother ; which afterwards is to  
 be dried in the shade, or in the Win-  
 ter on the back of an Oven when  
 the Bread is drawn ) *ana* ( of each )  
 ℥i ( one scruple or twenty grains )  
*si quis addere velit scobem auri pre-*  
*tiosius redderetur medicamentum* ( if  
 any body pleaseth to add gold Pow-  
 der, that is, filed very fine, or ra-  
 ther leaf gold, the medicine would  
 be render'd more precious ) *omnibus*  
*tenuiss. contritis commisceantur* ( all  
 these ingredients being very finely  
 powdered, let them be mixt toge-  
 ther ) & *ejus* ℥i ( and thereof one  
 Scruple ) *infantulis, aut* ʒ℥ ( or half a  
 Dram is to be given to little infants. )  
*Adultis vero integra* ʒ cum *hydromel.*  
*exhibeatur ;*

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*exhibeatur*; but to those that are grown up, a whole Dram may be given in Mead.

This following is also a Drink mentioned by the same Author, and equally approved of by most of his Successors; which to spare time I will give it you in *English*.

23. Take large dry Figs fifteen in number, Corants one ounce, Gum Dragant two drams, of Fenil and Columbine seeds, Saffron, whole and not bruised in a Mortar, one scruple; boil them in three pints of Barly water in a close Pipkin for two hours; of which a quarter of a pint may be given Morning and Evening. And to young Children it will be sufficient to let them drink a Decoction of Liquorish and Figs made in Whey of Goats Milk: Instead of Whey, Posset-drink may be used.

Some prefer expelling Emulsions made out of *Naphew*, Garden-cress, Carduus, or Columbine seeds, one or two sorts of them mixt with a third  
or

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or equal parts of Melon seeds, with a sufficient quantity of Milk water, Carduus, Elder, or Scabious water, and sweetned with Pearl sugar, or the like.

24. Those that pretend to drive out *per accidens*, by abating the impetuous Ebullition, through administering Juleps rendred acid by admixture of Spirit of Sulphur, Vitriol, or Sea salt, must necessarily be much in the wrong, in regard that they by their cutting acuties, or points, do not only wholly take away that proportion of viscuosness or glutinosity, that is requisite in the Blood to continue a moderate Ebullition; but they kill and extinguish the natural, vital, and animal Spirits, that should cause the Ebullition, work the separation and expulsion of the malignant Matter, and consequently must yield and give way to the malign Particles, to immerse themselves, and croud deeper into  
the

the centrical Parts; these Physicians are fitter for *Bethlem*, than to be trusted with such as are afflicted with the Small-pox, or Measles.

25. I do not conceive, that the mass of Blood is alike throughout its whole extent, but that here and there some small portions of it may be more viscous and tougher than the rest; neither is the malignant Matter, or venomous Particles equally distributed throughout the mass, but here and there they are immerst into the Blood in greater parcels; and some of those possibly of greater malignity than the rest: From hence I infer, that the Ebullition is mostly performed in three, four, or five days, and consequently is the separation of the malign Matter; so that immediately after, it is expelled in the space of a day or two, in its greatest proportion and number of Pox; but then you must not imagine, that the Ebullition intirely ceaseth, but continues here and there



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there in the mass, where those tougher portions of Blood are, and probably loaded with parcels of malignanter Particles; I say continues for several days, and thence it is, you have so oft several days after the general expulsion Small-pox daily appearing, and those of the biggest and worst sort.

26. The use of this Remark is, That though the general Ebullition seems to be over, there still remaining Ebullitions in portions, you must have a care you do not exhibit Medicines, that may extinguish or damp the said Ebullitions; and in this particular in some cases a Physician's skill is brought to a trial: For sometimes though the Patient is full of Small-pox, and have kept their station for several days, they may all strike in; or if they do not strike in, and seem all to be come out, the Patient may die.

26. Another observation of importance is, That except by bleeding  
ing



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ing after the Eruption, more are killed by strong Cordials, and driving out Juleps, than by any other means whatsoever, which after my manner I shall easily make out to you.

27. Those common Juleps owing their cordial and driving out Vertue to Epidemick or Plague water, or any other of that kind, as *Aq. Bezoart.* *Aq. Gilberti*, &c. which being no more than Spirit of Wine inforced in its heat, and impregnated with abundance of hot ingredients; the greatest Cordiality that can be abstracted from them, is from the Spirit of Wine, which if swallowed by any in perfect health, in too great measure, will soon cause him to be burning hot, mad, senseless, and extremely drowsy, so as to fall thence into a deep snoring sleep, which Physicians attribute to a narcotick Sulphur, and which they say, is in all Wine and winy Spirits, and consequently in all those forementioned cordial Waters. Those drunken symptoms

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ptoms are to be imputed to those adventitious Spirits, suddenly and impetuously rushing in great throngs to the Heart and Brain, that put the Spirits into the greatest disorder and confusion that is possible; by clashing and violent jumbling of the arterial Spirits, they occasion that great burning; by impetuously joulting of the animal Spirits, they force them into Madness; and by their great throngs having thrust out, dispersed, and diminishd the animal Spirits, they cause that tottering and weakness of Joints, and depravation of all the Senses; and through their piercing subtilty, rarefying the viscus Juice of the source of the Nerves, locking themselves up within them, impel the Drunkard into that deep sleep. Now imagine a Patient weak in the third degree only (for I will suppose the extremity of the fourth degree to be death), to take every two hours three spoonfuls of this Cordial, *viz.* Four ounce

ces

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ces of simple Waters, mixt only with two ounces of Epidemick, Gilberts, or the like Water (but very oft there are three and four ounces, besides other inflamers, as Tincture or Spirit of Saffron, Spirit of Harts-horn, *Theriac. Lond. And. Diascord. &c.*) every two hours; in every four and twenty hours he must have swallowed a quarter of a pint of the scortching Cordial, which necessarily must put him into a violent burning, a madness, and an excessive wakefulness, or deep sleep, which hapning upon this hot Cordial, the Physitian out of Ignorance, not in the least distrusting his driving out Medicine, ascribes the said burning heat to the height of the putrid Fever; the Madness, (which he terms a *Delirium*) to the malignity of the Small-pox; and the over-wakefulness, or deep sleep (by him stiled a *coma vigil*, or *soporosum*) to malign Vapours rising to the Brain; whereas not only all this mischief is occasioned by his driving

driving out Cordial ; but the Small-pox are either driven in again, or if remaining in the skin, are there hardned and turned into blew or black, or those that were upon coming out, are kept in.

28. Nothing a Physitian is more blameable in, than in administering a Medicine, of which he neither knoweth who prepared it, nor what it doth consist of ; wherefore they that advise the use of the *Goa-stone* in the Small-pox, ought to be censured the worst of Empiricks : For considering it to be a jumble of *Indian* Ingredients, what they are, whether beneficial or hurtful, whether poisonous or salubrious, whether they are always compounded of the same materials, or now and then some new thing put in ; all which none can know, but the knavish Makers and Traffickers of it, the Jesuits of *Goa* ; and take the best of their cheating Stones, sure I am, that an ounce of *Gascon's Powder* is worth  
a thou-

a thousand of them. As I do much suspect some of those Jesuitical Stones, I do much more suspect any Physitian that uses them, if he hath been bred up among the Jesuits in *Spain* or *France*, and studied at their charge, though afterwards he may seem to abjure their Religion upon a Dispensation; for whenever the Devil hath once got a Man in his clutches, he so ingages him, that he is not easily lost. Now what great universal Mischief such a disguised Jesuitical Physitian is capable of performing against the greatest of Adversaries to Popery, is not easily apprehended.

29. From the Small-pox attended with a simple Ebullition of the Blood, effervescency, or fermentation (as they call it) which goeth off in a great measure in four or five days, I pass to that, which is accompanied with a putrid, or malign Fever, and which always keeps even pace with the Small-pox, increasing, abating,  
or



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or leaving the Patient for the most part, at the same time that the venomous Distemper doth.

As the indication taken from the simple Ebullition doth refer us to Remedies, that reduce it to moderation, so in this latter case the putrid Fever doth require such Remedies, that may abate it to a lower degree of a putrid Ebullition, simple Ebullition, or to an Effervescency, yet so as not to take it off wholly; for then the Small-pox will either not come forth at all, or being expelled they will most certainly turn in again, or grow blue or black; wherefore all acid Medicines, that are wholly such, are to be industriously avoided, and above all bleeding, unless you intend to kill the Patient.

30. The *Indicata*, or Remedies to perform this Work, being anciently cooling Apozems and Juleps, framed out of some cooling simple Waters, and sweetned with Syrups of the same quality, proving ineffectual,



fectual, are totally rejected by the latter Age, which ran a long while upon hot Sudorifics, with as little success, until this last start of Physicians substituted a course of Jesuits Powder, equalling the cooling and hot sudorific Medicines in the worst of success. Wherefore to answer this last Indication, I never did arrive to the knowledge of more than two Medicines, though one is common enough, but uncommonly prepared; the other was never known, or used by any but my self. I will not descant upon their Success or Vertues further, than that I have found them to exceed, what has been hitherto used; and probably other Physicians may detect others beyond these, though as yet I have not perceived they have. However, either of them will take up more room in their description and preparation, than the short design of this Treatise will permit, wherefore shall refer it to another opportunity. In the mean time  
I must

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I must also tell you, neither the one nor the other is more infallible, than the best of Medicines; the one is prepared out of Harts-horn, the other out of a Mineral, and a Vegetable.

Of those vulgar Prescriptions, a Decoction of *Scorzonera* Roots, and Burnt Harts-horn, Testaceous Powders, and some of those small low Cordial Waters, (as they term them) as *Aq. Sambuci, Scabios. card. b. ulmar. &c.* mixt with no higher Compound than an *Aq. Scordij comp. ij.* in my opinion are to be preferr'd. I do sometimes use *Diascordium*, though much varying in the composition and preparation from the common of *Fracastorius*, which was particularly invented by the said Author against Epidemic Loosnesses, and as ill put together out of strong fermenting or inflaming Ingredients, as *Pepper, Ginger, &c.* as is possible.

31. The Urgent Symptoms are by most particularly regarded, among which

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which that of a Hæmorrhage, or violent Bleeding, requires the speediest Remedy; to which purpose *Henric ab Heer* mentions one in his Observations, that is most signally effectual, viz. a Toad hung about the neck, or about that part that's nearest to the vessels, that profuse this abundance of Blood; I do esteem a few Grains of *Camphor*, mixt with a good *Diascordium*, far beyond it, which also is no less effectual against an immoderate Flux of the Belly, and some other extraordinary Symptoms.

32. The Small-pox when matured, ought by no means to be perforated, in regard that the nitrous Air entring, will cause so many fordid little Ulcers. The best Medicine I have yet met with, is a Liniment of Oil of *Ben*, *Sperma Ceti*, and Eggshells calcined, and grinded into an impalpable Powder on a marble, adding to it for the smell's-sake, a drop or two of *Ol. Rhodij*.

33. Hi.

33. Hitherto I have kept as near as I could, to Indications drawn from the Small-pox, and its cause, according to the old Notion: As for such as I do usually desume from the *Phænomenon* I have set down in this Tract, are differing, and will take up too much time to run over again; for which Reason I think it convenient to come to a

**F I N I S.**

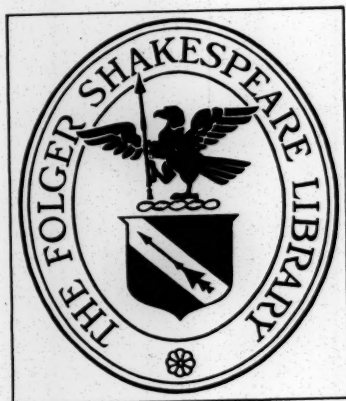






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# RECORD OF EXHIBITION

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